

TOWARDS A RURAL SETTLEMENT PLAN

REGIONAL OFFICIAL PLAN STUDY

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TOWARDS A RURAL SETTLEMENT PLAN
REGIONAL OFFICIAL PLAN STUDY

Planning & Development Department
Regional Municipality of Hamilton-Wentworth

October 1976

TOWARD A RURAL SETTLEMENT PLAN

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1.0 INTRODUCTION

Development pressures have been increasing in the rural areas as the result of an increase in primarily urban related development. These pressures could ultimately lead to conflicts with agriculture and open space - the predominant land uses in the rural area.

The move from the cities to the rural areas is a continuing phenomenon which has resulted from a variety of factors such as increased mobility, higher salaries, disenchantment with the city environment. The move to the rural areas has led to the creation of pockets of urban dwellings and strip development located along many rural roads.

This type of development may become very costly because of the different outlook and values of the new residents. Usually urban-oriented, these people expect a higher level of municipal service in such areas as police and fire protection, snow removal, piped water and social and recreational facilities. Any advantage gained from an apparent increase in assessment may be more than offset by such demands.

1.1 STUDY OBJECTIVES

In order to better utilize the resources of the rural area, it is the intent of this report to:

- (i) provide a detailed examination of the rural area and deal with its more specialized problems which exist because of differences in scale, location, rate of growth and basic requirements, such as municipal services as compared to the urban area;
- (ii) provide a framework for growth that will be compatible with the growth of the urban portions of the constituent municipalities;
- (iii) provide input for the Regional Official Plan based on the reactions to this proposal as well as providing each constituent municipality with a framework to plan their own rural area.

Though this study deals with the unserved Rural Area, the Conglomerate Alternative in the "Options for the future" report considers the implications of extending municipal services to Glanbrook and/or Mount Hope. Basically, this study provides a number of possible alternatives for rural development and it is expected that modifications will be made as the Rural Settlement Plan evolves.

1.2 THE STUDY AREA

The Hamilton-Wentworth Region is approximately 438 square miles in area. Approximately 355 square miles, 82% of that Planning Area, are rural. The Study Area is illustrated in Figure 1 , entitled, "Urban and Rural Areas". All the area municipalities, with the exception of Hamilton, have a rural portion.

The separation of the Region into urban and rural areas is for statistical purposes only. Many urban/rural boundary variations are possible. The boundary shown throughout this study should, therefore, be assumed to be neither a viable nor a proposed area for urbanization.

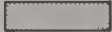
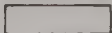

The Rural Area, for the purpose of this proposal, includes a variety of Settlement Areas, some of which are recognized as Settlement Areas, Village Residential or Hamlets in existing Official Plans. In addition to the above areas, there are other Settlement Areas of different sizes with similar functional characteristics which are also included in this examination of Settlements.

1.3 STUDY CONTENT AND ORGANIZATION

The discussion of the proposed Rural Settlement Plan that follows is organized into nine chapters. For those who do not choose to read the full document, the second chapter provides a summary reviewing the major implications. The third chapter is a discussion of the Rural Development Issues. Chapter four discusses the Hierarchy of Rural Settlements. A description of the existing development and its relationship to Regional networks and services is provided in chapter five. The evaluation of Settlement Areas is provided in chapter six. The proposed growth, in terms of population and housing, in the Rural Area is discussed in chapter seven. Chapter eight proposes a General Rural Development Plan. Finally, chapter nine provides the guidelines for development in the Rural Area.

Figure No. 1

LEGEND

Urban Area	
Rural Area	
Boundary Between Urban & Rural Area	

NOTE:
THE BOUNDARIES AND AREAS SHOWN ARE ZONES PROVIDED FOR STATISTICAL PURPOSES ONLY. **THEY IN NO WAY REPRESENT A PROPOSED DEVELOPMENT BOUNDARY.**



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Towards A Rural Settlement Plan URBAN AND RURAL AREAS

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2.0 SUMMARY

ASSUMPTIONS:

This is a summary by chapter of the proposed "Rural Settlement Plan". For the purposes of this report, two overriding assumptions were made:

- (i) the separation of the Region into urban and rural areas is for statistical purposes only, since many urban/rural boundary variations are possible. It should be assumed, therefore, that the boundary shown throughout this study is neither viable nor proposes an area for urbanization
- (ii) it is assumed that though the Plan for the Rural Area is proposed here, apparently independent from the Urban Options, it is actually an integral part of the "global" consideration of the Region as a whole. Minor adjustments will have to be made when the two are integrated.

DEVELOPMENT ISSUES:

Based on the existing development in the Region, a number of issues or questions arise which must be addressed. It is the intent of the report to address the following questions:

- o Where in the rural area should the anticipated development be encouraged so that the adverse impacts on agricultural land and environmentally sensitive areas, the need for additional services, and potential adverse impacts from the future airport can be kept to a minimum?
- o How much new development should be provided for in the rural area; how much agricultural land should be preserved in the Hamilton-Wentworth Region; and which lands should be preserved?
- o How can environmentally sensitive areas be effectively protected?

- o Where in the rural area and to what magnitude can new development be accommodated in harmony with the natural environment without requiring piped sewer and water services?
- o What additional transportation (including transit), police, social, educational and health services are to be made available to the rural area; and how do alternative development patterns for the rural area affect the efficient and effective delivery of these services?
- o Should the existing Mount Hope Airport be expanded or should a new airport site be developed? What limitations should be placed on new development in the vicinity of the selected airport site in order to minimize the potential adverse impacts by the Airport?

EXISTING DEVELOPMENT:

Expansion of some settlements has placed heavy physical pressures on the land. For example, Greenville, Mount Hope, Binbrook and Winona now require complete municipal services if additional extensive growth is to be permitted.

Municipal services are not provided in the Rural Area except in some new rural residential subdivisions which have a communal well system. Solid Waste Disposal Sites have, in most cases, reached their capacity and will be phased out in the near future.

Community services and facilities are generally provided.

Accessibility in the Rural Area, provided by an adequate road system and by bus line services to some areas, is good.

An important and large part of the Region's Open Space is located in the Rural Area providing areas for recreation and leisure activities and for environmental purposes. Some of the environmentally sensitive areas and Hazard Lands are located within existing Open Space.

The existing rural population of about 40,000 persons is distributed throughout the whole Rural Area but, the westerly part of the Rural Area is more densely populated.

The largest portion of the existing employment within the Rural Area is related to the resource base, i.e., agriculture, mining, etc., and to the servicing of the rural population.

More than 60 percent of the labour force resident in those rural municipalities commute to work in the urban area of Hamilton-Wentworth or, to other Regions.

SETTLEMENT PATTERNS:

In the development of any plan for the Rural Area, the hierarchy of settlements should be utilized as a basis for a logical and orderly distribution of services. The higher up a centre is in the hierarchy, the broader the range of services offered by that settlement and the larger the population that it serves. In determining development in the Rural Area the above should be taken into consideration.

SETTLEMENT EVALUATION:

In order to determine the degree of suitability that each settlement has for development, an evaluation matrix was designed. Briefly, this matrix consisted of three groups of negative impacts (physical-environmental, social and transportation). Settlements that were suitable for development had the fewest number of negative impacts, therefore, the greatest potential.

In terms of growth potential, there were 4 settlements that were rated "good":

- Freelton
- Harper's Corner
- Orkney
- Westover

Settlements with a poor growth potential are:

- Millgrove
- Rockton
- Dickenson Road

Tapleystown

Vinemount

Binbrook

Mount Hope

The balance of the settlement areas (16) have only a satisfactory or fair potential for growth.

GROWTH PROPOSED:

It is anticipated that between 100 and 150 lots will be created per year in the Rural Area to the year 2001. This study assumes 100 dwelling units per year, but this figure is flexible and can be recalculated at the upper limit (150 D.U./year) by utilizing the same methodology as described here. That is - by referring to:

- i) the functional hierarchy of settlements
- ii) settlement evaluation and growth potential matrix
- iii) and the individual site evaluations (at a larger scale)

It is also proposed that household size will decline. These projections of household growth accompanied by decreasing household size indicate that population in the Rural Area will remain relatively constant at approximately 40,000 persons. The number of dwelling units and population in settlement areas by 2001 are shown in Table 7.1, page 60.

PROPOSED GENERAL RURAL PLAN:

The proposed General Rural Plan discusses the types and approximate location of development proposed. These are illustrated on the map entitled "General Rural Plan" (Figure 18).

The following are the major land use recommendations:

- agricultural lands in soil classes 1 and 2 should be designated and preserved as prime agricultural land. Class 3 soils should be kept for agricultural production for as long as possible. Exceptions to this recommendation should only be made in order to:
 - i) expand some settlement areas
 - ii) to convert agricultural lands for the purpose of mineral extraction
 - iii) allow very limited non-farm residential development, of the estate type, to occur in areas not affected by physical and environmental constraints as described in Chapter 6.

- The existing areas of mineral deposits should be preserved and used only for mineral extraction (or agricultural purposes on an interim basis) in order that stone and gravel requirements can be met in the future. (The existing mineral resource areas are shown in Figure 12).
- Environmentally sensitive areas and open space should be protected and preserved.
- The existing rural road network is adequate. Design improvements and increased maintenance are recommended as development proceeds.
- Within local municipalities, development will result in an increased demand for some urban-related services. The provision of these urban-related services will involve costs which should be fully realized. These costs will be in proportion to the additional population housed in the Rural Area - and their distribution. The most substantive costs will be for providing Community Facilities and Social Services to a reasonable standard. This excludes municipal sewer and water.
- Until the question of the location of the future airport is resolved, new development in the Rural Area should be directed, as much as possible, away from those settlement areas which have a potential for social disruption caused by noise from aircraft operations. These areas are: the villages of Mount Hope, Carlisle and Southcote.
- The villages of Mount Hope and Binbrook have been identified as alternatives for the location of a future Municipal Centre for Glanbrook. In view of the potential for social disruption to Mount Hope (due to noise from aircraft operations), Binbrook appears to be a better location for the future Town Centre, at this time.
- There are two basic rural growth distributions recommended as being viable within the Region: the Rural Growth Trend, which is a projected growth based on past trends and the Western Concentration which is a westerly shift in concentration to Flamborough.

PLANNING GUIDELINES:

Planning guidelines were developed with the aim of utilizing the scarce resources of the Rural Area wisely. Implicit in this goal is that the concentration rather than the dispersion of development is an objective which will minimize the cost of public services and minimize the negative impacts of urban development in the Rural Area. In short, development should occur primarily in the settlement areas.

The proposed Rural Plan is based on the following objectives:

Sanitary Disposal System:	to ensure suitable soils for septic tank and tile field systems.
Water Supply:	to ensure the availability of an adequate ground water supply.
Solid Waste Disposal:	to ensure the provision of new sanitary land fill sites.
Mineral Resources:	to preserve mineral resource areas.
Agriculture:	to preserve adequate prime agricultural lands for the production of food.
Forests:	to ensure suitable forested areas and woodlots capable of timber production.
Hazard Lands:	to prevent development in hazardous lands.
Environmentally Sensitive Areas:	to preserve environmentally sensitive areas.
Open Space:	to select possible areas for open space purposes.
Ground Water:	to maintain a sufficient ground water supply for existing and future development.
Surface Water:	to protect surface water bodies from detrimental effects on their eco-system.
Transportation and Utilities:	to ensure an adequate transportation system and to recognize the needs for public utility facilities.

It is realized that a strict adherence to all of these guidelines is difficult, if not impossible, and that trade-offs will have to be made in order to provide a satisfactory mix of land in the Rural Area.

3.0 RURAL DEVELOPMENT ISSUES

An understanding of the Regional rural development issues is vital to the preparation of effective and useful guidelines for development in the rural area. The rural development issues, which are primarily Regional in nature, are described below.

MAGNITUDE AND NATURE OF RURAL GROWTH

The magnitude and type of new development are basic issues which must be addressed in the process of preparing guidelines for development of the rural area. The amount of development which is to be accommodated will determine, to a considerable extent, the magnitude of: the need for conversion of agricultural land to non-agricultural uses; the potential for adverse impacts on environmentally sensitive areas; the need for social, protective, transportation and piped services; and other impacts which the application of the guidelines are intended to minimize.

Three important conclusions regarding the anticipated magnitude of development are:

- a) The number of people (approximately 40,000) living in the area which will be rural in the year 2001 is approximately the same as the number of people living in the area which is now rural.
- b) Although the rural area population will remain relatively constant, there will be a need to provide for approximately 100 to 150 new dwelling units per year. This means that the size of the family will decrease and the majority of the dwelling units will be single family units.
- c) The geographical limits of the rural area may change by the year 2001 depending upon the urbanized area boundaries adopted in the Regional Official Plan.

Given the magnitude and type of new development anticipated for the rural area, the following basic issue arises:

Where in the rural area should the anticipated development be encouraged so that the adverse impacts on agricultural land and environmentally sensitive areas, the need for additional services, and potential adverse impacts from the future airport can be kept to a minimum?

PRESERVATION OF AGRICULTURAL LAND

Increasing population and an improving standard of living (both locally and world-wide) are simultaneously creating the need to utilize more land for new development and the need to produce more food. This combination of factors has made the loss of agricultural lands a local, provincial, national and international issue.

To ensure that the guidelines for directing new development in the Region's rural area adequately consider this issue, three issues must be addressed:

- a) How much new development should be provided for in the rural area?
- b) How much agricultural land needs to be preserved in the Hamilton-Wentworth Region?
- c) Which agricultural lands should be preserved?

Chapter 7 of this report describes the amount of new development which is anticipated by the year 2001 in the rural area of the Region. Since the one hundred additional dwelling units per year is the "unavoidable" growth that will occur, a sufficient amount of land must be found in the rural area to accommodate this growth.

Since the issue of preservation of agricultural land relates to provincial, national and international agricultural policies and demands for food, the question of "how much agricultural land needs to be preserved in the Hamilton-Wentworth Region" cannot be answered with any degree of accuracy or certainty. The only reasonable resolution of this question may be to recognize that some amount of new development must be accommodated in the rural area and this development should be accommodated in such a way as to minimize the amount of good quality agricultural land required to be converted to non-agricultural uses.

The Canada Land Inventory has classified soils according to their capability for food production. In addition, certain lands are especially suited for the production of tender fruit. To determine which agricultural lands should be preserved, priorities will have to be established, based on the agricultural capability of the land and other factors.

PROTECTION OF ENVIRONMENTALLY SENSITIVE AREAS

The public, private industry and government have, in the recent past, acquired an awareness of the role played by the natural environment in creating a desirable standard of living.

In an opinion survey of the general public, community organizations and municipal planning committees within the Region, it was found that the protection of environmentally sensitive areas was considered to be one of the four most important of fourteen proposed Regional development Goals. Figure 13 identifies the environmentally sensitive areas within the Region. These areas were identified in a study commissioned by the Hamilton Region, Grand River, Halton Region and Niagara Peninsula Conservation Authorities. These areas include certain swamps, marshes, wetlands, woodlots, forests, unique land features, wildlife areas and flood plains. They include lands and water of inherent biological sensitivity, such as: those areas which support groundwater recharge, stream headwaters, unusual plants, wildlife or landforms; rare or endangered species; or other combinations of habitat and landform which could be valuable for scientific research or conservation education. The study also found that most of these areas are now privately owned.

There are two basic issues relating to the protection of environmentally sensitive areas:

- a) How can those areas be protected effectively?
- b) Since most of these areas are privately owned, what is the role of Regional Government in the protection of these areas?

DELIVERY OF SERVICES

The Regional Municipality of Hamilton-Wentworth Act gave the Regional Government the responsibility for providing certain services. These services include: sewer and water, regional roads, transit (if and when Regional Council approves a Regional transit system), social services, police and solid waste disposal. In addition, there are some services which are not the responsibility of the Region but, nevertheless, must be considered in the preparation of guidelines for development. These services include education and health.

In the preparation of the guidelines for development of the rural area, issues relating to the need for and method of delivery of these services must be considered. Specifically, some of these issues are:

- a) Where in the rural area and to what magnitude can new development be accommodated in harmony with the natural environment without requiring piped sewer and water services?
- b) What additional transportation (including transit), police, social, educational and health services are to be made available to the rural area; and how do alternative development patterns for the rural area affect the efficient and effective delivery of these services?

AIRPORT

Recognizing that the Federal Government has identified the need to provide for increased air travel demands at either an expanded Mount Hope Airport

or at a new airport site, the guidelines for development in the rural area will have to take into account the potential impact that such an airport facility will have on future development. Section 5.5 of this report indicates the alternative airport sites which are now being studied by the Federal Ministry of Transport.

The major issues relating to the Airport which have to be considered in the preparation of guidelines for development of the rural area are:

- a) Should the existing Mount Hope Airport be expanded or should a new airport site be developed?
- b) What limitations should be placed on new development in the vicinity of the selected airport site in order to minimize the potential adverse impacts by the Airport?

We have addressed this study to assist in the resolution of as many of these issues as possible, at this time.

4.0 SETTLEMENT PATTERNS

In the human organization of space, the greatest physical contrast is between rural and urban forms. Population and activity concentrations began in a very early period when towns arose to perform basic functions:

- (1) To exercise control
- (2) To act as a center for an exchange of goods
- (3) To process resource materials

The first two constitute, in a broad sense, service or "central place" functions - those provided from a center for a surrounding territory or hinterland. The discussion of these central-place functions will follow after a brief history of settlement development in what is today Hamilton-Wentworth.

4.1 HISTORY OF THE RURAL AREA

Historically, the rural townships played a major role in the growth and development of the Region as a whole. This is where settlement began and where transportation and industry first appeared.

In 1773, the townships to be named Ancaster, Beverly and Flamborough were established. As early as 1786 there were scattered settlements, in what is present-day Ancaster and the Township of Saltfleet and in the adjoining parts of Barton.

Of all the early settlements, Ancaster showed the greatest promise as a potential center of industry, commerce and population. Ancaster Creek provided water for the many saw and grist mills that sprang up in that area; mills provided sources of power and places of employment, that were essential prerequisites for a population build-up. By 1809 the Township had 400 residents as compared to Beverly's 141 and Flamborough's 314, and by 1817 the population had reached 1,037.

By 1812, a hamlet called Dundas Mills had appeared. In addition to saw and grist mills, Dundas possessed two important roads: Dundas Street (Governors Road) and the "improved" road that led through Ancaster to the Mohawk Village. As shipping developed on Lake Ontario, the Desjardins Canal was opened (1837). Ancaster began a steady decline in importance, while Dundas enjoyed its "commercial apogee" from 1820 - 1850 when it was

one of the three centers (the other two were Port Credit and Oakville) possessing the best connections with the inland townships.

Glanford and Binbrook were much slower developing. In 1815 Glanford had only 50 ratepayers and though the stage road from Hamilton to Lake Erie passed through this township, by 1849 it possessed only one village and one saw mill. Both of these areas (now Glanbrook) have remained sparsely populated relative to the other townships, but they have played an important role in the agricultural development of the Hamilton-Wentworth Region.

As the railways were extended in the mid 1800's, they tended to bypass Ancaster and Dundas and to favour Hamilton. Eventually, the Industrial Revolution elevated the Township of Barton and the City of Hamilton into a position that far outstripped the other local townships. As Hamilton grew, development spread eastward, so that Saltfleet (now Stoney Creek) is now the most highly urbanized of the area municipalities (with the exception of Hamilton and Dundas). It still, however, retains some of its important Fruit Belt.

4.2 THE CONCEPT OF FUNCTIONAL HIERARCHIES

The ideal spatial arrangement of human settlements has been theorized by a number of people. The most common characteristic of the number of human settlement models is that population centres are organized in an hierarchy. Walter Christaller, in his theory of central places, was a pioneer in the settlement hierarchy concept. The following analysis of settlements in the Region is generally based on Christaller's work, however, his theories will only serve as a framework.

Each level of the hierarchy is characterized by a specific functional structure and a specific distance relationship with uniformity of spacing between centres on the same hierarchical level. In terms of a functional hierarchy, higher order central places supply all the goods and services of lower order places as well as a number of higher order goods and services which differentiates them from, and sets them above lower order central places. A settlement is only considered a central place if it provides goods and services to an area larger than its physical limits. Higher order central places offer a greater range of goods and services, have more establishments, larger populations, trade areas and trade area population than lower order central places.

4.3 EXISTING FUNCTIONS OF SETTLEMENT AREAS

The concept of a functional hierarchy can be used in order to identify a ranking of the settlements in the Region. With an analysis of the functions which exist in each rural settlement area, those areas containing the highest order functions (i.e., functions having the largest sphere of influence) can be identified as higher order rural centres. Settlements containing fewer functions (and/or lower order functions) will rank lower in the hierarchy. An example of a higher order function would be a school as it would attract children from a large area. Table 4.1 shows the functions which are presently existing in the various settlement areas.

4.4 PROPOSED HIERARCHY OF CENTRES IN THE REGION

The Hamilton-Wentworth Region is made up of a number of centres each performing numerous functions. These centres can be placed in an hierarchy according to the numbers and types of functions which they perform. The criteria of functions which determine the order of a central place are listed in Table 4.1.

Within the Regional hierarchy of centres, there are both urban and rural centres. The urban centres constitute the four highest orders of the hierarchy. Hamilton's Lake Plain development is a first order centre. Hamilton's Mountain Area is a second order centre. The urban areas of Ancaster, Dundas and Stoney Creek are third order centres. Waterdown, not being connected to the major urban area of the Region, has similar functions as the first, second and third order centres but at a considerably lesser scale and frequency and is therefore regarded as a fourth order centre. The distinguishing feature between the four orders is the scale and frequency of functions performed by each centre. These four orders of centres perform the major economic, social, political and transportation functions for the Region.

Table 4.1

- 18 -

INVENTORY OF EXISTING FUNCTIONS IN SETTLEMENT AREAS

Settlement Area

Functions

	Municipal Centre	Community Hall & Arena	Post Office	Library	School	Church	Fire Station	Park	Commercial	Automotive Com.	Bank	Industry	Agricultural Industry	Doctor's Office	Dentist	
	FREQUENCY															TOTAL FREQUENCY
<u>Ancaster</u>																
Alberton	1								1	1						3
Carluke	1					1		1	1							4
Copetown			1		1	1			2				1			6
Jerseyville					1	1			1				2			5
Southcote																0
<u>Flamborough</u>																
Brockview						1							1			2
Flam. Centre						1	1	1	1	1						5
Freelton	1	1			1	3	1	1	5	1	1	3	1	4		23
Greensville	1		1		1	2	1	2	2	1		3	1			18
Harper's Corner									1	1						2
Kirkwall						1										1
Lynden	2	1	1		1	2	1	1	8	2	1		1	2		23
Millgrove	1	1	1		1	1	1		1							7
Mountsberg																0
Orkney						1										1
Rockton	1		1				2	1	3				1			10
Sheffield			1	1		1	2	1	2	2						10
Strabane				1		1			2	1			1			6
Troy			1			1			2	1						5
Westover	1								1							2
Carlisle	1	1	1			1		1	2	1	1	1	1			12
<u>Glanbrook</u>																
Dickenson Rd.										1						1
Mount Hope	1	1	1	1	1	1	1	1	8	2	1	6		2	1	28
Woodburn		1			1	1		1	2	1						7
Binbrook		1	1	1		3	1	1	4	2	1	2		2		19
<u>Stoney Creek</u>																
Tapleytown					1	1		2	1							5
Vinemount			1						1							3

The rural centres make up the fifth and sixth orders in the hierarchy. Fifth order centres, being Freelton, Lynden, Mount Hope, Binbrook and Winona, perform at least 9 of the functions listed for fifth order centres in Table 4.2 Sixth order centres would be the remaining centres which perform at least 3 of the functions listed in Table 4.2

The service areas for the urban centres include those of lower orders. However, the service area for a fourth order centre, although it overlaps that of the higher orders, does not overlap that of other fourth order centres. An example of this concept is that although the service area of Freelton is a part of Hamilton's service area, it should not overlap with Lynden's service area. The end result of such a spatial arrangement of service areas is that an equilibrium is produced. Each centre has enough of a service area to support the functions required for the centre's order in the hierarchy. If the service area is reduced, the functions will no longer be viable because each function needs a certain population to support its existence.

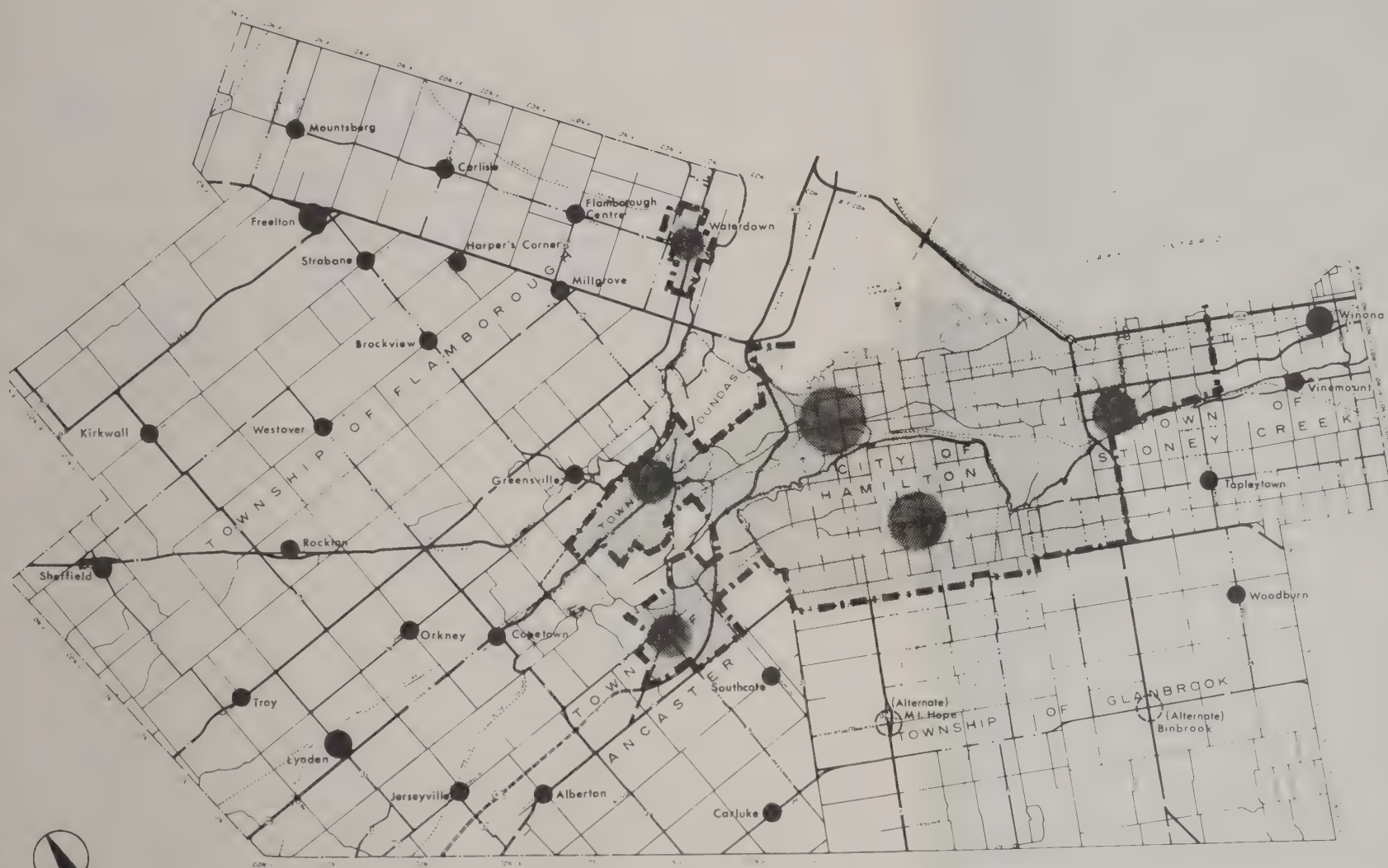
The structure of the Region has its centre in the Urban Area. The fourth and fifth order centres will support a certain number of functions. If any centre exceeds its preferred size or order, it is likely that inefficiencies or perhaps duplication of functions may occur. The equilibrium and balance in the hierarchical structure of the Region will depend on the spatial arrangements of the centres and their respective service areas. See Figure 2, Functional Hierarchy of Settlements.

Within this structural arrangement it must be recognized that a number of services are provided outside of the Region. For instance, some services are provided in the areas of Burlington, Guelph, Cambridge, Brantford and Grimsby. On the other hand, the Region serves a wider area than itself for such services as education, hospitals, industry, religious activities and organizations and communications.

Table 4.2

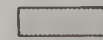
RURAL CENTRES

FUNCTIONS	FIFTH ORDER	SIXTH ORDER
Municipal Centre		
Community Hall	X	X
Arena	X	X
Post Office	X	
Library	X	
School	X	X
Church	X	X
Fire Station		
Park	X	X
Commercial	X	X
Automotive Commercial	X	
Bank	X	
Industry		
Agricultural Industry		
Doctor's Office	X	
Residential Development	X	X
Social Services		

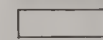


LEGEND

Urban Area



Rural Area



Boundary Between
Urban & Rural Area



Urban Centres

First Order



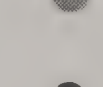
Second Order



Third Order



Fourth Order

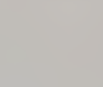


Rural Centres

Fifth Order



Sixth Order



Towards A Rural Settlement Plan FUNCTIONAL HIERARCHY OF SETTLEMENTS

Planning & Development Department
Hamilton - Wentworth Region

Central places are important in that they tend to concentrate services and thereby minimize the costs of those services.

The ranking of centres based on their functions is also one indication of their potential for growth within an established system or structure.

The proposed hierarchy of centres is meant to be regarded as a preliminary hierarchy of centres for the entire Region. The Official Plan will be prepared on the basis of a combined plan for the urban and rural areas and it is understood that there will have to be adjustments between the urban and rural areas and the hierarchy when these combinations and adjustments take place.

5.0 EXISTING DEVELOPMENT

This section generally describes the existing development in the Rural Area and relates it to the Hierarchy of Rural Centres. The Rural Area was previously reviewed on a much more detailed basis within the various substudies of the Regional Official Plan - which have been applied here.

5.1 RURAL POPULATION IN HAMILTON-WENTWORTH REGION

Between 1966 and 1971 the farm population, in Canada, dropped from 1.9 million to 1.4 million. Some of this was the result of reclassification of rural areas to urban areas from 1966 to 1971. However, more of this decline in rural population was the result of people moving to the cities, either because the family had given up farming or because young people left home. The national farm population declined by about a quarter¹.

The distinguishing characteristics of rural population, based on statistical data available from Statistics Canada up to 1971, are as follows:

- 1) Birth rates are generally higher in rural areas as compared with urban areas.
- 2) Number of people aged 20 to 34 living on farms is less (15% of the total farm population) than the number of this age group living in cities of 500,000 or more people. There it represents 24% of the total population.
- 3) People 10 to 19 years of age represented 27% of the total farm population while in the big cities people in that age group represented only 18% of the total.

The above are the national average characteristics of the rural population. In the absence of hard data, they were assumed to approximate the rural population characteristics in this Region. Population in the Rural Area of Hamilton-Wentworth in 1971 is shown in Table 5.1.

¹ Statistics Canada Census 1966-1971.

Table 5.1

POPULATION IN THE RURAL AREA
OF THE REGION 1975
(As Estimated from Figure No. 1)

<u>MUNICIPALITY</u>	<u>POPULATION</u>
Flamborough	16,960
Dundas	1,352
Ancaster	3,488
Glanbrook	10,057
Stoney Creek	7,308
	<hr/>
	39,165
	<hr/>

As shown in Table 5.1 above, the existing rural population in this Region is approximately 40,000 persons. A close examination of the rural population indicates that although agriculture is the predominant land-use, only 1/6th of the rural population are farmers. The remaining 5/6ths of the rural population is urban oriented in that it derives the major portion of its income from sources other than farming or farm employment outside the rural area. In addition, Table 5.2 (below) indicates a population decrease on Census Farms between 1941 and 1971.

Table 5.2

FARM POPULATION, THE COUNTY OF WENTWORTH ¹

<u>POPULATION</u>	<u>1941</u>	<u>1961</u>	<u>1971</u>
Population on Census Farm	13,224	8,762	7,778
Farm Operators	3,265	2,367	1,863

5.2 EMPLOYMENT

Only a portion of the people who live in the rural area and who are available for work are employed in the rural area. Although available data are limited to 1971 and a few municipalities in the rural area, Table 5.3 illustrates the importance of employment opportunities in the urban area for residents of the rural area. In the predominantly rural municipalities cited in Table 5.1, less than one quarter of the labour force resident in those municipalities was employed in jobs which were located in their municipality residence. More than 60 percent of the labour force resident in those rural municipalities commuted to work in the urban area of Wentworth or to other Regions.

¹Source: Agricultural Census of Canada, D.B.S.

In that portion of the Region which could be related to the rural area¹, it was found that there were 7,254 jobs in 1971.

Table 5.3

PLACE OF WORK FOR RURAL RESIDENTS - 1971*

MUNICIPALITY	RESIDENT LABOUR	PROPORTION OF LABOUR FORCE EMPLOYED IN MUNICIPALITY OF RESIDENCE	PROPORTION OF LABOUR FORCE EMPLOYED IN HAMILTON & DUNDAS	PROPORTION OF LABOUR FORCE EMPLOYED OUTSIDE OF WENTWORTH
Beverly	2,605	24	21	45
Binbrook	1,475	21	53	14
Flamborough E	2,440	17	37	35
Flamborough W	3,440	16	53	24
Glanford	2,345	19	65	13

*Source: 1971 Census of Canada, special tabulation.

Most of the jobs in the rural area are related to the natural resource base, e.g., agriculture and mining, or servicing the rural population.

The following is a list of the type of employment in 1971 in an area which is approximately the same as the rural areas of this study:

Table 5.4 TYPES OF RURAL EMPLOYMENT

<u>TYPE</u>	<u>NUMBER</u>	<u>% OF TOTAL</u>
Manufacturing	1,604	22
Retail	885	12
Service	2,996	41
Other	1,769	24
Total	7,254	100

Source: Hamilton-Wentworth Planning Department

The "other" type of employment includes farming.

¹ See Hamilton-Wentworth Planning Department, Economic Base Inventory, Table 4.10, Planning Divisions: 11, 12, 13, 15, 21, 32, 41, 42, 52, 53.

According to the 1971 Census of Canada, there were 2,605 people employed in the agricultural industry¹, of which 1,863 were farm operators managing the same number of census farms². Between 1961 and 1971, the number of census farms declined by 21.3 percent, approximately the same rate of decline as the Province of Ontario. In 1971, census farms occupied approximately 170,000 acres, a 13.7 percent decline since 1961. Some of the reasons for the decline in the number of farms include the impact of urban development, farm enlargement or abandonment and the conversion of farms to open space. Only 62 percent of census farms in Wentworth had agricultural sales greater than \$2,500., and only 35 percent had sales greater than \$10,000. Clearly, a problem of farming in Wentworth, as in the Province, is the low level of sales of a large portion of farms.

One variable in this situation is off-farm employment. More than one-quarter of all farm operators were employed off the farm for between 229 to 365 days in 1970. A second possible variable is the enlargement of farm operations. However, high land costs, affected by speculation, and uncertainty regarding future urban development, may be an inhibiting factor in this process.

The types of farming in Wentworth in 1971 are listed below. The distribution is based on census farms with annual sales greater than \$2,500. in 1970, classified on the basis of the commodity which constituted 51.0 percent or more of agricultural sales. Table 5.5 clearly illustrates the predominance of cattle, dairy and fruit and vegetable farms.

¹ "The industry division of Agriculture includes, therefore, all land holdings primarily engaged in agricultural production. In addition, it also includes establishments primarily engaged in providing services to agriculture such as animal husbandry services, horticultural services;" etc. Statistics Canada, Standard Industrial Classification Manual, 1970, P.23.

² A census farm is defined as an agricultural holding of one acre or more with sales of agricultural products during 12 months prior to the census of \$50. or more.

Table 5.5

TYPES OF FARMING

<u>TYPE</u>	<u>% OF TOTAL</u>
Dairy	24
Cattle, hogs, sheep	33
Poultry	8
Small grain	4
Field crops	3
Fruits & vegetables	17
Mixed	3
Other	9
Total	<u>100</u>

5.3 SETTLEMENT AREAS

Most Settlement Areas originated from crossroad agglomerations which expanded into rural Settlement Areas with distinctive names and identities. In some cases, settlements became dormitories for the urban area and subsequently lost their "local" character. The needs and demands of the present population in most Settlement Areas have changed and are different from those of the former rural oriented population. Few settlements can even now be readily distinguished as rural centres in an ideal sense. These may include a general store, automotive service station, park, school and community facilities.

Changes in the rural development pattern resulted from land severance policies which created most of the existing non-farm residential development. Non-farm residential development frequently resulted in lineal, dispersed and often isolated strip development in many parts of the Rural Area. This type of development has contributed to the breaking up of agricultural holdings and produced a reduction in the size and number of viable farms. In a number of cases, this development has led to an undesirable affect on the natural landscape. (See Appendix B).

5.4 MUNICIPAL SERVICES

Most of the Rural Area is serviced by individual and/or communal ground wells for water, and septic tanks for domestic sanitary waste disposal, excepting the following:

- Winona - Fruitland area is serviced by municipal piped water;
- Gardendale Subdivision in the Winona-Fruitland area is serviced by a lagoon and also is provided with municipal piped water;
- Mount Hope Airport is provided with water piped from Hamilton .

A variety of surface and subsurface conditions related to depth and type of overburden, rock formation, stream locations, etc., are known to exist in the rural areas, which affect the availability and quality of ground water supply and the functioning of septic tanks. Figure 3 generally outlines the areas of septic disposal suitability.

Investigations carried out in the past indicate that certain major problems exist in the Rural Area which are summarized below. Detailed information on this subject is contained in the Municipal Services (Inventory) Report.

Major Servicing Problems

A. Town of Stoney Creek

1. Winona Area

The problem in the Winona area is sanitary pollution due to (i) malfunctioning of private septic tanks; (ii) Gardendale communal lagoon. For the latter, the absence of an ideal receiving watercourse nearby poses serious limitations on the satisfactory discharge of effluent, thereby causing pollution and odour problems.

B. Township of Glanbrook

2. Mount Hope

There is a shortage of water in the hamlet of Mount Hope which depends on individual wells. Chemical and bacteriological quality is also poor.

C. Town of Ancaster

3. Jerseyville

Domestic sewage is often found to be discharging into watercourses due to malfunctioning of septic tanks.

4. Lynden

Similar conditions exist in Lynden as found in Jerseyville.

D. Township of Flamborough

Chemical and bacteriological tests were carried out in the past, on samples of water taken from a number of settlements. Settlements were defined as problem areas where 50 percent or more samples were found to be contaminated. These are listed below.

TOWNSHIP OF FLAMBOROUGH

SETTLEMENT	SOURCE OF WATER SUPPLY	DEPTH RANGE FT.	AVAILABILITY OF POTABLE GROUND WATER	PERCENT OF SAMPLES CONTAMINATED (%)
Greensville	drilled well	20 - 60	Good	50
	dug well	12 - 23		
	spring	- -		
Sherwin Ct. Survey	drilled well	40 - 85	Fair	70
Millgrove	drilled well	60 - 100	Fair	88
	dug well	15 - 20		

TOWN OF DUNDAS

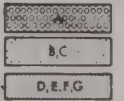
McCormick Park Survey	drilled well	40 - 55	Fair	50
	dug well	10 - 15		
Pleasant View Survey	dug well trucked in (Cistern)	- -	Poor	100

Solid Waste Disposal

The jurisdiction over solid wastes is divided between the Region and the area Municipalities. Only the disposal of solid waste is the responsibility of the Region, and the area Municipalities are responsible for collection of solid wastes and haulage of the same to designated disposal sites.

LEGEND

Good
Fair
Poor



Not To Scale

Sept. 76

Towards A Rural Settlement Plan

**GENERALIZED SEPTIC
DISPOSAL SUITABILITY**

Planning & Development Department
Hamilton - Wentworth Region

There are seven sanitary landfill sites located in the Region which are presently used for disposal of solid wastes. The haulage of solid wastes to these sites from households and commercial operations in the Rural Areas is presently done both by private and/or municipally collected operations.

Most of these sites are reaching capacity and it is estimated that all of the sites will be phased out of operation within the next five years. Policies and programmes for long-range waste management are under review. Various studies indicate that the disposal of solid wastes in the future will be centralized and the scattered landfill sites will not be provided. It is anticipated that transfer and baling stations will be provided at suitable locations.

5.5 TRANSPORTATION

Roads

Most settlement areas have good access via the existing road networks. The existing arterial road system is shown on Figure 4. The arterial system provides primarily for the movement of through traffic and consists of the Kings Highways and other arterial roads. In addition, there is a system of local roads whose primary function is to provide access for abutting properties.

Public Transit

Some scheduled public transit service is available to the rural area. Most of the service is operated by Canada Coach Lines Limited. Scheduled service between Binbrook and the Eastgate Shopping Centre in Stoney Creek is provided by Wills Motors Limited. Except for the latter, all of the scheduled public transit service is oriented to and terminates in Downtown Hamilton where connections can be made with the Hamilton Street Railway's urban system and also with the inter-city bus systems serving areas outside of the Hamilton-Wentworth Region.

The location and frequency of the rural area bus service is shown on Figure 5 and in Table G.1, included in Appendix G. In April, 1974, the Hamilton-Wentworth Regional Council passed a resolution which stated, in essence, that the operation of the public transit system within the Region should be the responsibility of the Regional Municipality. Discussions are now underway to work out the details of implementing this resolution.

Railroads

The Canadian National, Canadian Pacific and the Toronto, Hamilton and Buffalo Railroads have rail facilities in the Rural Area. (see Figure 4).

Airport

In March, 1972 the Federal government announced plans to improve existing airport facilities in southwestern Ontario including those facilities at Mount Hope.

In the spring of 1973, concern was raised about the impact of airport expansion at Mount Hope. As a result of this concern, the Federal government delayed the expansion plans pending the results of additional studies which would identify the social, environmental, economic and operational impacts of alternative sites.

The purpose of these studies is to assess the need for improved airport facilities, the capability of the existing airport to be developed to provide the required service and the feasibility of providing the required facilities at an alternative site.

In addition to the four alternative concepts at the existing Mount Hope site, five alternative sites are being studied in detail (Figure 6). Each of the alternative airport sites will be evaluated by the Federal study on the basis of the following factors:

Figure No. 5

LEGEND

- Urban Area
- Rural Area
- Urban Centres
 - First Order
 - Second Order
 - Third Order
 - Fourth Order
- Rural Centres
 - Fifth Order
 - Sixth Order

- Bus Route (10 or more one-way trips per day Monday to Friday)
- Bus Route (less than 10 one-way trips per day Monday to Friday)
- Route 'A' - see Appendix G-1

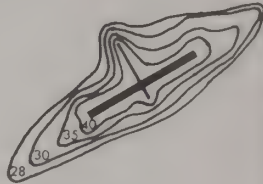


LEGEND

Airport Site
Study Area



1990 N.E.F.
Contours



Existing Urban Development



Rural Area



Committed Development Boundary



Rural Centres

First Order



Second Order



Third Order



Fourth Order



Rural Centres

Fifth Order



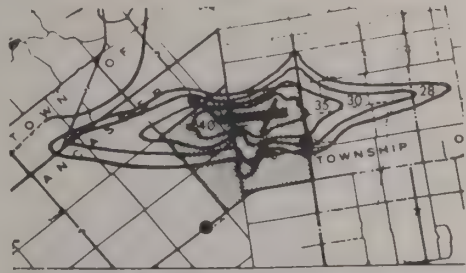
Sixth Order



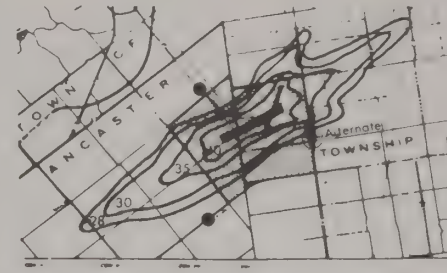
Alternate



Source: Hamilton Airport Socio-Economic Study
Canadian Air Transportation
Administration, 1976



Concept No. 2 For Site 10 Mount Hope



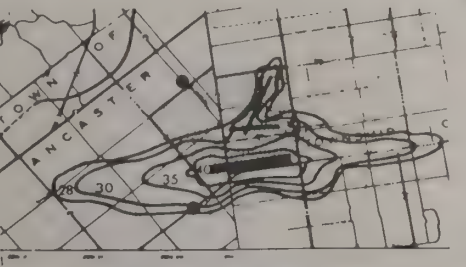
Concept No. 3 For Site 10 Mount Hope



Sept 76



Not To Scale



Concept No. 4
For Site 10 Mount Hope

Towards A Rural Settlement Plan **ALTERNATIVE AIRPORT SITES AND SETTLEMENTS**

Planning & Development Department
Hamilton - Wentworth Region

- a) safety and technical considerations
- b) flight disturbance
- c) ecological impact
- d) sociological impact
- e) passenger convenience
- f) regional planning impact
- g) economic impact
- h) development costs

At this time, the most suitable alternative has not been selected. Therefore, the airport could be in one of a number of alternative locations, some of which are outside the Hamilton-Wentworth Region.

If a site had been selected by the Federal government for the future airport, it would be possible to determine which of the alternative Regional Development Patterns would receive the least amount of social disruption due to noise from the future airport.

However, at this time, a site has not been selected for the future airport. For this reason, it is not possible to identify, with any degree of certainty, the magnitude of "social disruption" which will occur to residential development in the Rural Area from the future airport.

5.6 COMMUNITY SERVICES AND FACILITIES

5.6.1 Health Care and Social Services

The expectations of rural residents about the availability and accessibility of health care and social services has changed as the proportion of farm to non-farm people has shifted (this shift has been discussed in the population section of this chapter).

In the past, rural residents of Hamilton-Wentworth have not used Social Services as extensively as their urban counterparts. The most

important feature of the old rural human service system is its legacy of self help based on family and community interdependence. It seems that a hiatus in the delivery system has opened up as changes have occurred in rural society and in the form of the family.

Health Care

According to the location of their homes, rural Hamilton-Wentworth residents may choose family physicians whose practices are within the Regional Boundaries or beyond. For example, traditionally Sheffield residents have used Cambridge as their service and shopping centre, or people living near Winona are likely to have family physicians whose practices are in Grimsby. See Appendix J.1 for the number and locations of practices other than in the Cities of Hamilton and Burlington. The availability and accessibility of family doctors in the rural area are illustrated in Figure 7.

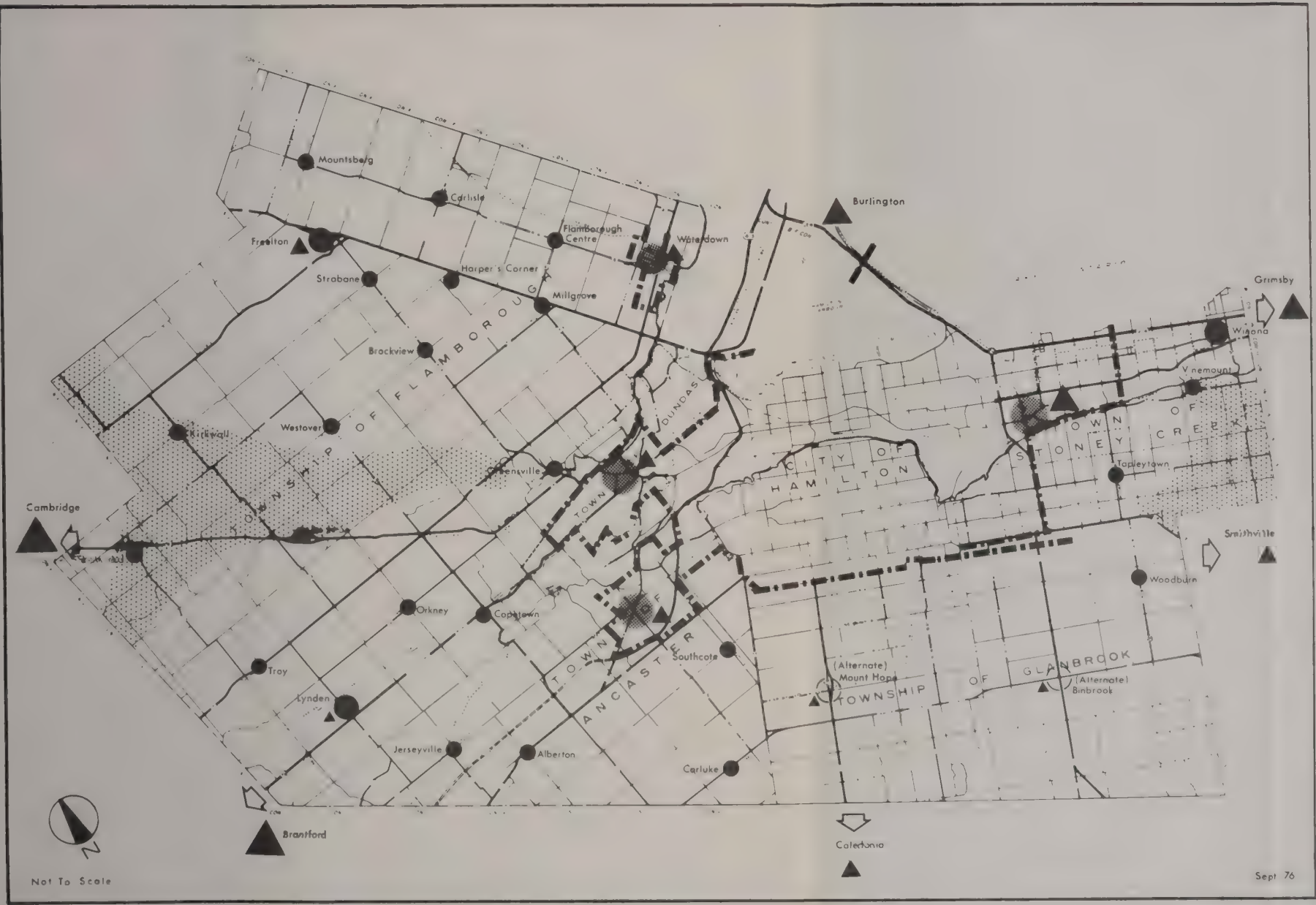
Table 5.6 (below) shows where urban and rural residents outside the City of Hamilton requiring hospitalization were treated in 1974.

RESIDENCE	TOTAL NO. OF CASES	PERCENTAGE OF TOTAL NO. OF CASES TREATED IN SELECTED HOSPITAL CENTRES				
		HAMILTON	BURLINGTON	BRANTFORD	GRIMSBY	OTHER
Dundas	2,910	91.7	4.3			4.0
Stoney Creek	5,167	80.3	9.6		6.9	3.2
Ancaster	1,654	91.2	.9	4.7		3.2
Flamborough	2,252	31.6	41.1	16.1		5.2
Glanbrook	1,226	94.8	1.3		.8	3.1

Rural residents may use any one of the five hospitals in the City of Hamilton or one of the six in the adjoining municipalities, according to their physicians' preference and admitting privileges. The availability and accessibility of emergency care facilities (hospitals) is illustrated in Figure 8.

To farm people, the public health nurse has been a trusted health professional. The Nursing Division of the Hamilton-Wentworth Health Unit has five offices to service the Region.

Figure No. 7



LEGEND

Boundary Between Urban & Rural Area

Urban Centres

Third Order
Fourth Order

Rural Centres

Fifth Order
Sixth Order

Location of Family Doctors

1-2 Doctors
3-5 Doctors
7 or more

Rural area outside 10 Min. Access Time To The Nearest Doctor

Towards A Rural Settlement Plan
AVAILABILITY AND ACCESSIBILITY OF FAMILY DOCTORS

Planning & Development Department
Hamilton - Wentworth Region

E

Boundary Between Urban
& Rural Area

Location Of Emergency
Care Facilities Hospitals

Urban Centres

Third Order

Fourth Order

Rural Centres

Fifth Order

Sixth Order

Rural Area (incl. Waterdown)
Within 20 Min. Access Time
To General Hospitals Located

Within The Region

Outside The Region

Within & Outside The Region

AVAILABILITY AND ACCESSIBILITY OF EMERGENCY CARE FACILITIES (HOSPITALS)

Planning & Development Department
Hamilton - Wentworth Region

Home Care, a service available following discharge from hospital, and a pilot project providing alternative service to hospital, both administered by the V.O.N., are community-based Regional Health Services.

Assessment and Placement, a health service having direct links with all physicians and facilities within the Region and beyond, arranges residential care placements for the elderly and physically disabled.

Table 5.7 (next page) sets out the location of family physicians, dentists, ambulance services, Nursing Division offices of the Health Unit, Nursing Homes and Homes for the Aged with special care units, in the third, fourth and fifth order Urban and Rural Centres in Hamilton-Wentworth.

Social Services

The shift in the proportion of farm to non-farm people in rural Hamilton-Wentworth, changes in the farm economy and in the form of the family, have created gaps in the traditional rural human services support system supplied by relatives and neighbours and deficiencies in social service delivery.

In Hamilton-Wentworth, as in the rest of Canada, our rural and urban settlements contain human casualties, the mentally distressed, those who cannot learn, and those who cannot construct and sustain satisfying human relationships. Then there are the special needs of the physically disabled and the services required by all citizens made necessary by a constantly changing and increasingly complex society. Industrialization has freed many rural residents from locality and family. The family's earlier primary position in society has been transferred to the individual. The shift has been "at a price" for now it is necessary to fill gaps created by the loss of the family as a service support system in both rural and urban society.

General Personal Social Services, in today's terms, are directed towards the needs of persons, regardless of their social and economic status. They include access and helping services. Community Development is a separate service.

Access services are emerging as a major human service category. They include information and linkage (formerly referred to as liaison)

Table 5.7

- 35 -

LOCATION OF SPECIFIC HEALTH SERVICES ACCORDING TO
HIERARCHAL ORDER OF URBAN AND RURAL CENTRES

LOCATION	NUMBER OF FAMILY PHYSICIANS	NUMBER OF DENTISTS	AMBULANCE LOCATIONS	HEALTH UNIT AND NURSING DIVISION OFFICES	NUMBER OF NURSING HOMES	NUMBER OF HOMES FOR FOR THE AGED OFFERING SPECIAL CARE
<u>URBAN - FIRST ORDER*</u>						
Hamilton						
<u>SECOND ORDER*</u>						
Mountain Centre						
<u>THIRD ORDER</u>						
Ancaster	5	5	3			
Dundas	12	5		1	1	2
Stoney Creek	18	5		1	1	
<u>FOURTH ORDER</u>						
Waterdown	6		1			
<u>RURAL - FIFTH ORDER</u>						
Binbrook	2	1				
Freelton						
Greensville						
Lynden	1					
Mount Hope	2					
Winona						
<u>SIXTH ORDER</u>						
Alberton						
Brockview						
Carlisle						
Carluke						
Copetown						
Dickenson Road						
Flamborough Centre						
Harpers Corners						
Jerseyville						
Kirkwall						
Millgrove						
Mountsberg						
Orkney						
Rockton						
Sheffield						
Strabane						
Tapleytown						
Troy						
Vinemount						
Westover						
Woodburn						

*Services in the First and Second Order are excluded for comparison purposes

services. They may be delivered together or separately. Information services communicate factual information about government at all levels, community services, recreation, commercial and professional services, etc., and are nearly always delivered by telephone. Linkage services focus on matching "needs" and "resources". They provide aid in locating specific resources and in negotiating their use with service providers. Access services in Ancaster and Dundas offer additional services beyond information and linkage.

Helping services encompass a wide range of non-residential and residential services. In this Region they include public assistance (where the problem is a budget deficit), counselling, guidance and therapy, rehabilitation, homemakers, hostels, boarding homes, group homes, half-way houses, adoption, residential treatment centres, homes for the aged, day care (adult and child), budgeting help, meals on wheels, family life education and tutoring. The Directory of Community Services, which is published annually, reveals that most helping services are located in Central Hamilton below the escarpment¹. The percentage of the assessed population receiving public (general welfare) assistance in the former County of Wentworth was lower than for the City of Hamilton. Comparative figures for September 1972 and 1973 are as follows²:

	City of Hamilton	County of Wentworth
September 1972	3.4%	.8%
September 1973	3.2%	.6%

Table 5.8 (next page) sets out where access and helping services are located in the second, third, fourth, fifth and sixth orders in the hierarchical order of existing rural and urban centres in Hamilton-Wentworth. Helping services that are located in the centres in

¹Directory of Community Services, 1975-1976, Social Planning and Research Council of Hamilton and District.

²Source: Ministry of Community and Social Services

Table 5.8 include homemakers, day care, a half-way house, a Senior Citizens' centre and two homes for the aged. Additional helping services are delivered in Dundas on specific days, weekly or bi-weekly. Personal service provided by neighbours is still a significant component in rural service delivery.

5.6.2 Recreation

Local

There are approximately 200 acres of local parks in the rural areas of Ancaster, Stoney Creek, Flamborough and Glanbrook.

The types of facilities provided in these parks include community centres, arenas, rinks, sports fields, tennis courts and playlots.

These local parks service the individual settlements in which they are located, but are available for use by other residents. A list of settlements with parks is provided in Table 5.9.

Regional

In the rural areas of the Region there are approximately 8,630 acres of public open space. Different sources provide similar definitions of Regional parks and reserves as "large land and forest reservations, preferably with unique scenic character that serves one or more cities or part of a large metropolitan Region. They are usually located outside corporate boundaries of cities. These areas serve three purposes: to preserve a portion of natural landscape; to supplement recreation facilities available in urban areas; to act as a greenbelt separating communities in a large highly developed region".

Agencies which administer these areas include the Royal Botanical Gardens, the Hamilton, Halton, Niagara and Grand River Conservation Authorities, the Ministry of Natural Resources which administers the Regional Forests in co-operation with the Region and the

Niagara Escarpment Commission charged with the responsibility of preparing a plan for the Niagara Escarpment.

An analysis of areas under public ownership in the rural area of the Region shows that there are 20+ acres per 1,000 population for the whole of the Region. Though not all of this land is associated with outdoor recreation, it is significant as a land reserve for possible future recreation and also relief from uninterrupted development.

In terms of location, the major portion of lands in public ownership which are available for recreation are found in Flamborough and Ancaster. Three areas are found in close proximity to the western boundary of the urban area. These include the Royal Botanical Gardens, the Dundas Valley and the Christie Conservation Area. These areas are strategically located being immediately accessible to residents in the urban area.

Additional public lands, including the Regional Forests and Conservation Authority Lands, are located in the outer reaches of the Region, as well as specialized private facilities. Private facilities, such as golf courses, are also located at the fringe of the urban area.

The following is a table of those settlement areas with existing local parks and their acreage by area municipality. (Table 5.9).

Table 5.9

EXISTING PARK LANDS
IN SETTLEMENT AREAS

<u>FLAMBOROUGH</u>	<u>EXISTING POPULATION</u>	<u>PARK</u>	<u>NUMBER OF ACRES</u>
Brockview	25	Strabane Community Park	8.6
Strabane	30		
Flamborough Centre	75	Flamborough Centre Park	11.8
Freelton	130	Centennial Park	2.6
Lynden	165	Lynden Memorial Park	(See Ancaster)
Rockton	50	Beverly Community Centre	63.0 This facility is intended to serve all of Flamborough
Sheffield	51	Sheffield Ball Park	4.0
Carlisle	300	Optimist Community Park	12.0
Clappison Corners	-	Northwest Community Centre	21.0 This facility is intended to serve all of Flamborough
SUB TOTAL			129.0
<u>GLANBROOK</u>			
Mount Hope	285	Mount Hope Community Centre	7.2
Binbrook	98	Binbrook Township Park	7.5
Woodburn	92	Woodburn Men's Club	3.7
Recreation Complex			30.0 This facility is intended to serve the whole Municip- ality
SUB TOTAL			48.4
<u>ANCASTER</u>			
Carluke	12	Carluke Centre	1.0
Jerseyville	105	Jerseyville Park	5.0
Lynden	165	Lynden Community Memorial Park	9.6
SUB TOTAL			15.6
<u>STONEY CREEK</u>			
Tapleystown	24	Tapleystown Park	6.5
RURAL TOTAL			199.5 (200 acres)

5.6.3 Education

While a number of small schools are still in operation, increasing costs and decreasing enrolments have forced those boards operating in rural areas to locate schools in more densely populated areas. This concentration permits each school to serve a larger area within Hamilton-Wentworth, with children being bussed where necessary.

Two School Boards serve rural Hamilton-Wentworth. The following sections of the Report discuss the Boards' operations with major emphasis being placed on existing school locations and boundaries, school capacities, and school transportation policies. Information concerning such School Board matters as administration, enrolments and budgets is available in the publication entitled, Community Facilities and Services Substudy - Education Inventory.

Public Schools

Public elementary and secondary school education in rural Hamilton-Wentworth is provided by the Wentworth County Board of Education. Serving the area municipalities of Ancaster, Dundas, Flamborough, Glanbrook and Stoney Creek, the Board operates a total of 49 elementary schools and 8 secondary schools.

A. School Locations and Boundaries

As identified in Appendix A-1 and Figure 9, schools operated by the Wentworth County Board of Education are located by Municipality as follows:

Flamborough	-	18 Elementary Schools 1 Secondary School
Ancaster	-	9 Elementary Schools 1 Secondary School
Glanbrook	-	5 Elementary Schools
Stoney Creek	-	10 Elementary Schools 3 Secondary Schools
Dundas	-	7 Elementary Schools 3 Secondary Schools

The public elementary and secondary schools serving the rural settlements are listed in Appendix A-2. Junior elementary schools are often located in or near a settlement. Students living beyond an acceptable walking distance are bussed to school. Senior elementary schools are located to serve several settlement areas and again, students living too far to walk are bussed. There are no secondary schools in the rural areas. They are located in the urbanized areas with students coming from both the urbanized and rural areas.

Boundaries or catchment areas are established by the Board for each individual school in accordance with such factors as routing of buses, density of population and grade enrolments. Schools and their boundaries are plotted on Figure 9 . As a general rule, several junior elementary schools (grades K-6) feed into one senior elementary school (grades 7-8). This school, in turn, feeds into a secondary school. For the purpose of simplification, only the boundaries for senior elementary schools and secondary schools have been plotted.

Although elementary school boundaries in the rural areas are flexible, they generally remain within municipal boundaries. As shown on Figure 9, however, boundaries for the eight secondary schools overlap municipal boundaries. Secondary school students can attend any secondary school operated by the Board if they can provide their own transportation.

Generally, however, the three Stoney Creek secondary schools serve Stoney Creek and Glanbrook. Ancaster High School serves not only Ancaster students but also attracts students from the nearby Beverly area and the Mount Hope area because it is on a semester system. The three Dundas secondary schools serve Dundas and the former West Flamborough and Beverly areas of Flamborough. Students may attend any of these three secondary schools, depending on their choice of course options. In addition, secondary school students from part of Beverly may attend Waterloo County secondary schools if they are closer. As a rule, students

from the East Flamborough area and the northern portion of West Flamborough attend Waterdown High School.

B. School Capacities

As indicated in Appendix A.3, the Wentworth County Board of Education schools have a total capacity of approximately 18,500 elementary pupil places and 8,875 secondary pupil places. These school enrolment capacity ratings are established by the Ministry of Education, based on classroom square footage and pupil ratings per classroom.

The Board began to witness decreasing enrolments in 1971 and took measures to counteract the impact of this enrolment trend. Also, in the late 1960's, during the reorganization of the Board, a number of rural schools were closed and students were relocated to centralized schools. An unofficial count shows that over the last few years a total of 5 schools have been closed and another 9 schools have been sold by the Board. An additional 3 schools are being closed for the 1976-1977 school year. However, in spite of school closing, the Board presently has a surplus in its schools of 5,573 elementary pupil places and 1,876 secondary pupil places. (Appendix A.3)

For purposes of analysis, Appendices A 4.1 to 4.3 showing elementary and secondary school current enrolments and capacities, by boundary area, were produced. These tables will enable us to predict the ability of the existing school system to accommodate the future school age population in the rural areas.

As illustrated, the 1975-1976 elementary school enrolments ranged from 42.2% to 95.8% of the school's capacities.

Many elementary schools in Ancaster and Stoney Creek were little more than half full. Enrolments for the secondary schools as shown in Appendix A.5 varied from 72.7% to 88.9% of their capacities in the 1975-1976 school year. Saltfleet Secondary School, however, is only at 59.9% of its capacity.

LEGEND

- Elementary School *
- Senior Elementary School Boundary *
- Secondary School *
- Secondary School Boundary *



Not To Scale

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* For Names See Appendix A-1

Towards A Rural Settlement Plan
PUBLIC SCHOOLS
Locations And Boundaries

Planning & Development Department
Hamilton - Wentworth Region

C. School Transportation

Since many schools operated by the Board are located in the urbanized area of municipalities, with students being bussed in from scattered rural areas, the yellow school bus has become a familiar sight along rural roads. Most rural students have no access to public transportation and live beyond the acceptable walking distance to schools.

As indicated in the Education Inventory, the Board transported approximately 50% of its elementary school pupils and 90% of its secondary school pupils in the 1975-1976 school year. Representing 6.5% of the Board's total budget for the same period, school transportation costs totalled \$2,000,652., at a per bussed pupil cost of \$128.55. Presently the Province pays approximately 85% of the Board's approved transportation expenditures. In the 1976-1977 school year, this percentage is expected to decrease to 75%, with the remainder being paid by the Board.

Separate Schools

Separate school education in rural Hamilton-Wentworth is provided by the Hamilton-Wentworth Separate School Board. Outside the City of Hamilton, the Board has jurisdiction in the municipalities of Dundas, Ancaster, Stoney Creek and in East Flamborough. In these municipalities, there is a total of ten elementary schools offering kindergarten to grade 8 classes. Grade 9 and 10 classes are only provided in Hamilton and Stoney Creek separate schools. The Board is presently in the process of establishing zones in Glanbrook and the remainder of Flamborough to enable it to locate schools here as well.

A. School Locations and Boundaries

Separate school locations and boundaries are indicated in Appendix A.6 and Figure 10. In addition, Appendix A.7 provides a list of separate schools according to the rural settlements which they serve.

Generally, separate school students in Ancaster, Stoney Creek and Dundas attend schools (grades K-8) in their own municipalities. Students from Flamborough, except those from Waterdown, have to cross municipal boundaries. Because Glanbrook has no separate schools, students from Mount Hope attend a separate school on the West Mountain of Hamilton, while those from Binbrook go to Stoney Creek.

In rural areas not served by the Board, students may attend separate schools in neighbouring municipalities outside of Hamilton-Wentworth. For example, students from the southern portion of Glanbrook may attend separate schools in Haldimand-Norfolk; those from West Flamborough may attend the nearest separate school in the County of Wellington; and those in Beverly may attend separate schools in Brant County.

Six of the seven separate schools in the Region offering grade 9 and 10 classes are located in the City of Hamilton and one in Stoney Creek. Therefore, most of the boundaries for these schools cover some portion of the Region which includes parts of Hamilton and the nearby area municipalities.

To expand on this point more fully:

- o Students from Dundas and Flamborough as well as from West Hamilton beginning with Ferguson Avenue attend St. Mary's Secondary School in Hamilton
- o Students from Stoney Creek and East Hamilton beginning with the Red Hill Creek attend Cardinal Newman Comprehensive School in Stoney Creek.
- o Students from Ancaster and Hamilton Mountain west of Upper Wentworth attend St. Thomas More Comprehensive School in Hamilton (West Mountain)

B. School Capacities

The Ministry of Education school capacity ratings for separate schools outside the City of Hamilton are indicated on Appendix A.6. A total of 4,363 pupil places were available for the 1975-1976

LEGEND

- Elementary School *
- Elementary School Boundary (Catchment Area)



* For Names See Appendix A-6

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Towards A Rural Settlement Plan
SEPARATE SCHOOLS
Locations And Boundaries

Planning & Development Department
Hamilton-Wentworth Region

school year, while the actual enrolment totalled 3,202 pupils or 73.4% of the capacity. Thus, a surplus of 1,161 pupil places existed.

Breaking the figures down by municipality, it becomes evident that some of the Stoney Creek separate schools are well under capacity. In particular, St. James the Apostle is only 21.0% full. The small enrolment here is due to the unexpected number of young families that moved into the Saltfleet Community. Most children in the boundary area of St. James the Apostle are not of school age. The school enrolment will change in the next few years when the children reach school age. Considering the fact that the Ministry of Education only expects the Board to fill their schools to 80% of capacity, most of the schools are close to or have surpassed this percentage figure.

C. School Transportation

Having jurisdiction in part of the rural area, the Separate School Board must provide transportation for many of its pupils living in scattered areas. In the 1975-76 school year, the Board provided transportation for approximately 16% of its total student population, with most of the 3,120 students from grades kindergarten to eight being bussed from the rural areas. For this period, the Board spent approximately \$654,000. on transportation which represented about 2.5% of its total budget. The per bussed pupil cost incurred by the Board was estimated to be between \$120.00 and \$127.00. However, 90 to 98 percent of these transportation costs are covered by Provincial Grants.

5.7 AGRICULTURAL SOILS

The Canada Land Inventory, under the Agricultural and Rural Development Act (A.R.D.A.), established Soil Capability Classes for Agriculture which indicate the food producing capability of soils.

The above inventory identified lands located in Soil Classes 1-3 as prime agricultural areas worthy of preservation, some Soil Classes (4 & 5) were of marginal value, and Soil Classes 6 and 7 were recognized as poor soils. Class 0, the organic soils areas, were not evaluated.

Report No. 4 of the Canada Land Inventory outlines the soil classes as follows¹:

"The first three classes are considered capable of sustained production of common field crops, the fourth is marginal for sustained arable agriculture, the fifth is capable of use only for permanent pasture and hay, the sixth is capable only for wild pasture while the seventh class is for soils and land types considered incapable of use for arable culture or permanent pasture".

Lands in soil classes 1 & 2 comprise approximately 165,000 acres in the Rural Area. Soil Capability Classes are shown on Figure 11.

5.8 MINERAL RESOURCES

The Ontario Ministry of Natural Resources has prepared a Mineral Resource Survey for the Hamilton-Wentworth Planning Area which identifies the important stone and gravel resource areas (Tables 5.10 and 5.11). The Mineral Resource areas are shown on Figure 12. This survey indicated the following existing stone reserves and gravel reserves:

¹ The Assessment of Soil Productivity for Agriculture, Canada Land Inventory, Report No. 4, Page 41.

LEGEND

- Soil Classification N.1.2
Prime Agricultural Area
- Soil Classification N.3
Secondary Agricultural Area
- Soil Classification N.4,5,6,7
Marginal Agricultural Area
- Soil Classification N.0
- Boundary between Rural and Urban Areas



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Towards A Rural Settlement Plan
SOIL CLASSIFICATION

Planning & Development Department
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LEGEND

- Gravel And Sand
- Limestone And Dolomite
- Boundary Between Urban And Rural Area



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Towards A Rural Settlement Plan

MINERAL RESOURCE AREAS

Planning & Development Department
Hamilton - Wentworth Region

Table 5.10

<u>EXISTING STONE RESERVES</u>	
<u>GEOGRAPHIC TOWNSHIP</u>	<u>TOTAL ESTIMATED STONE RESERVES (IN MILLIONS OF TONS)</u>
Ancaster	300
Hamilton	750
Glanbrook	3,180
Flamborough	18,700
Stoney Creek	4,000
TOTAL	<u>26,930</u>

Total gravel reserves are as follows:

Table 5.11

<u>EXISTING GRAVEL RESERVES</u>	
<u>GEOGRAPHIC TOWNSHIP</u>	<u>TOTAL ESTIMATED GRAVEL RESERVES (IN MILLIONS OF TONS)</u>
Ancaster	0.5
Hamilton	0.0
Glanbrook	0.0
Flamborough	57.0
Stoney Creek	0.0
TOTAL	<u>57.5</u>

Source: Mineral Resource Survey for the Hamilton-Wentworth
Planning Area - Ontario Ministry of Natural Resources, 1974.

5.9 ENVIRONMENTALLY SENSITIVE AREAS AND OPEN SPACE

These are lands which have a variety of assets, such as their scenic, wild-life habitat and unique plant and tree characteristics. A number of public Open Space areas are also environmentally sensitive areas. Figure 13 identifies these areas.

Forests

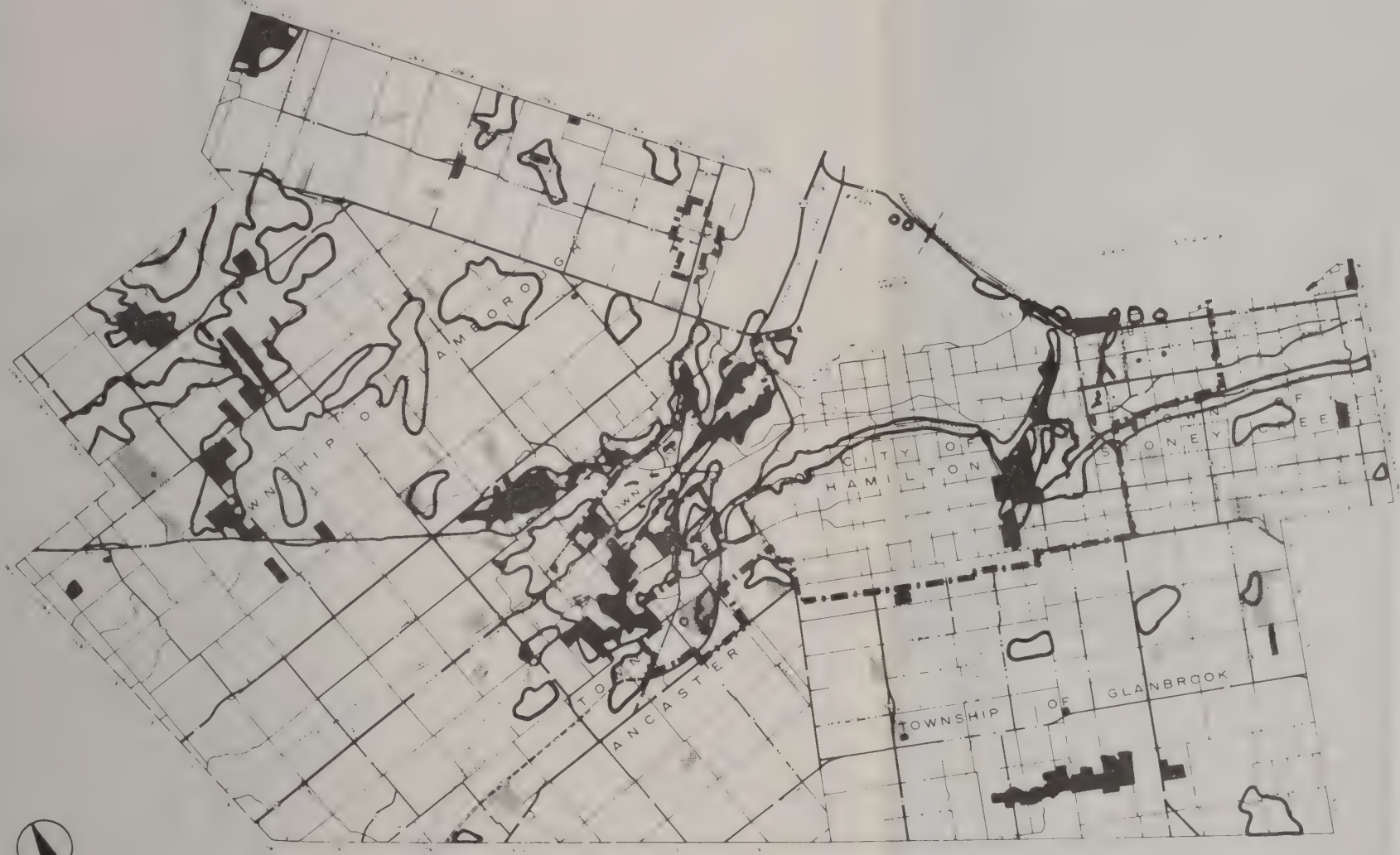
The Canada Land Inventory has evaluated the various forested lands within the Region. Many of these forested areas and woodlots often overlap other land uses, primarily those of agriculture, open space and environmentally sensitive areas. Figure 14 shows the locations of these woodlots.

Hazard Lands

Typical hazard lands are flood plains, marshy areas, areas which are susceptible to erosion or lands which have other adverse physical characteristics. Hazard lands are shown on Figure 15.

LEGEND

- Environmentally Sensitive Areas
- Open Space (Public)
- Open Space (Private)
- Boundary Between Urban And Rural Area



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Towards A Rural Settlement Plan

**ENVIRONMENTALLY SENSITIVE
AREAS AND OPEN SPACE**

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LEGEND

- Woodlot 
- Boundary Between Urban And Rural Area 



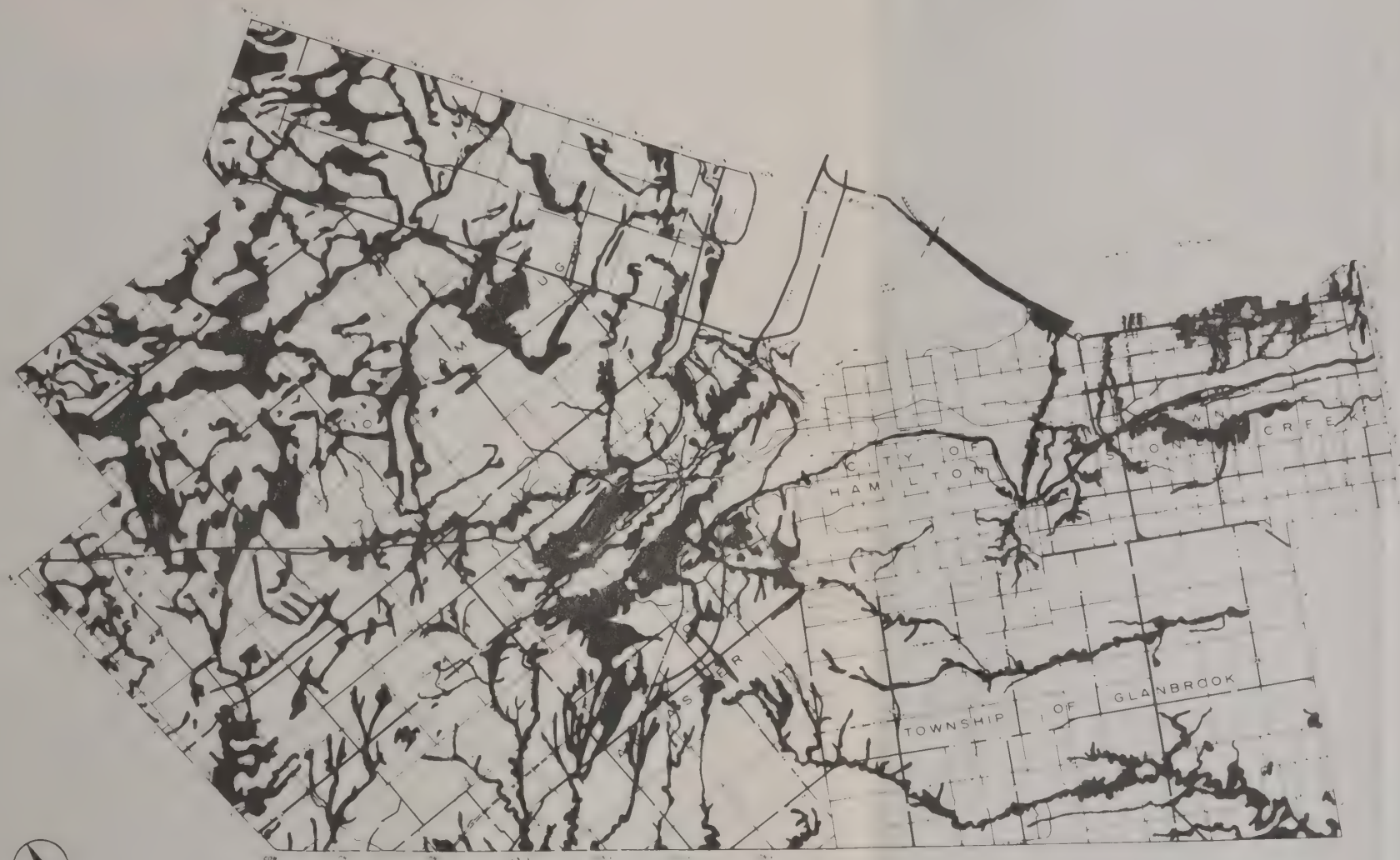
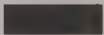
Towards A Rural Settlement Plan

WOODLOTS

Planning & Development Department
Hamilton - Wentworth Region

LEGEND

Hazard Lands



Not To Scale

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Towards A Rural Settlement Plan

HAZARD LANDS

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Hamilton - Wentworth Region

6.0 SETTLEMENT EVALUATION

6.1 DEVELOPMENT CONSTRAINTS

This chapter describes and applies a methodology for the evaluation of residential development in the Rural Area. The potential impact of development in the Rural Area was measured on the basis of existing land uses and their physical, environmental, social and transportation features.

It was felt that developments should be constrained where they would have a negative effect on a settlement area. Planning the various settlement areas involved the examination of the features which are recognized as "constraints". The acceptability of proposed residential development in the Rural Area was determined in this way.

In short, this chapter attempts to identify:

- (i) areas suitable for settlement purposes
- (ii) non-growth areas such as environmentally sensitive areas, open space, etc.

6.2 METHOD OF EVALUATION

The evaluation of the physical impacts was based on information from the Settlement Capability Study. Settlement areas were investigated to establish:

- (i) an evaluation of the texture and structure of soils to sustain sanitary tile systems
- (ii) the elevation of existing overburden, water tables and the quantity and quality of water supply
- (iii) the drainage characteristics of the soil.

The environmental and the social and transportation impact evaluation was based primarily on a number of substudies of the Regional Official Plan.

In order to determine the degree of potential development in the Rural Area, the major natural resource or environmental impacts must be located and considered. As indicated on the Combined Constraint Map (Figure 16) the natural resource areas are combined and include the prime agricultural

areas, the environmentally sensitive areas and the mineral resource areas.

The "no constraint areas" (no shading) are outside of the major natural resource areas. Areas shown in light shading to solid shading indicate a progressive unsuitability for residential or non-rural development, i.e., the darker the shading, the greater the number of natural resources and, therefore, the less suitable for development. It should be noted that certain physical features such as Hazard Land, Flood Plains, etc., are other factors which would also impede development and should be evaluated in conjunction with the Combined Constraint Map.

The social facilities impact evaluation involved an evaluation of possible changes in social character, Board of Education requirements, availability of recreational facilities and the availability of social and health care services for a settlement area.

Transportation impacts were determined on the basis of accessibility of local and Regional roads and the availability of Regional and Inter-Regional public transit facilities, in the Rural Area.

It should be noted that the impact of the Airport on rural settlements such as Southcote, has not been considered because the location of the Airport has not been officially determined. Originally, there were twenty-one alternative Airport sites. Today the number of alternative sites is six. However, there appears to be sufficient flexibility for development to accommodate all but the expansion of the existing airport site at Mount Hope.

The area necessary for the recommended maximum population was calculated for each settlement based on a person per dwelling unit ratio (3.0 P.P.D.U.), the number of dwelling units and the required road area. In a number of settlements it was found that physical and environmental impacts indicated that the recommended maximum population would require a much larger area than available for development purposes and would abut the existing settlement area.

LEGEND

Boundary Between Urban
And Rural Area



Urban Area



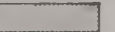
CONSTRAINTS

- Agricultural or Fruitland Area
- Environmentally Sensitive Area
- Mineral Resource Area

No Constraint



Constraint Alone of the above



Constraint Btwa of the above



Constraint Ctl of the above



Not To Scale

Towards A Rural Settlement Plan

COMBINED CONSTRAINTS

Planning & Development Department
Hamilton - Wentworth Region

6.3 EVALUATION MATRIX

The settlement evaluation is a measure of the potential impact of development on the subject area. The matrix included on Tables 6.1, 6.2, 6.3 and 6.4 indicate the extent of the negative effect that the proposed expansion would have on the existing features of the Rural Area. The higher the number (score) the greater the negative impact. The impacts are categorized into three groups: the physical impacts (Table 6.1); the environmental impacts (Table 6.2); and the social and transportation impacts (Table 6.3). Within each of these groups the individual impacts are assumed to have equal weight for purposes of scoring. For example, in Table 6.1, the impacts: septic tile systems, water supply and drainage, are all assumed to have equal weight or importance.

Although all the groups of impacts are important, it is apparent that certain impact groups are more important than others, especially as a prerequisite for development. Therefore, when evaluating the sum of the impact groups (Table 6.4), a method of individually weighting each group's importance was established. For example, the physical impacts were weighted as 3 "units of importance", as compared to the environmental impacts with 2 "units of importance", while the social and transportation impacts have 1 "unit of importance". This weighting scheme is reflected in the following example calculation:

$$\begin{aligned} \text{Average Total Impact of a Settlement} &= \frac{\text{Frequency of a physical impact} \times \text{Physical impact weight factor}}{\text{Total number of physical impacts}} \\ &+ \frac{\text{Frequency of an environmental impact} \times \text{Environmental impact weight factor}}{\text{Total number of environmental impacts}} \\ &+ \frac{\text{Frequency of social \& transportation impacts} \times \text{Social \& transportation weight factors}}{\text{Total number of social \& transportation impacts}} \end{aligned}$$

For example, consider Alberton's Average Total Impact:

$$\frac{2 \times 3}{3} + \frac{1 \times 2}{6} + \frac{1 \times 1}{7} = 2.47 \approx 2.5$$

A similar calculation was performed for each of the settlement areas (the results of each calculation are provided on Table 6.4). These results are to be viewed for comparative purposes only, with the intention of indicating the extent of the negative effect that the proposed expansion would have on the existing features of the Rural Area. As previously stated, the higher the score the greater the negative impact.

Table 6.1

EVALUATION OF PHYSICAL IMPACTS

Settlement	Septic Tile Systems	Ground Water Supply	Drainage	Score X
Alberton	X		X	2
Carluke	X	X		2
Copetown			X	1
Jerseyville			X	1
Southcote			X	1
Carlisle	X			1
Brockview	X		X	2
Flamborough				
Centre			X	1
Freelton				-
Harper's Corner				-
Kirkwall	X		X	2
Lynden			X	1
Millgrove		X	X	2
Mountsberg			X	1
Orkney				-
Rockton	X	X	X	3
Sheffield	X	X		2
Strabane			X	1
Troy	X			1
Westover	X			1
Dickenson Road	X	X	X	3
Woodburn	X		X	2
Tapleystown	X	X	X	3
Vinemount	X	X		2
Binbrook	X	X	X	3
Mount Hope	X	X	X	3
Greensville		X	X	2

Note: The higher the score - the greater the impact on the existing physical environment

Table 6.2

ENVIRONMENTAL IMPACTS

Environmental Impact

Settlement	Ecology	Hazard Land	Agriculture	Mineral Resources	Ground Water	Surface Water	Score
Alberton			X				1
Carluke			X				1
Copetown	X	X			X	X	4
Jerseyville	X	X	X		X	X	5
Southcote		X	X		X		3
Carlisle			X	X	X	X	3
Brockview				X			2
Flamborough Centre	X		X				3
Freelton	X		X				2
Harper's Corner			X	X			2
Kirkwall		X					2
Lynden	X		X			X	3
Millgrove	X	X	X			X	5
Mountsberg	X	X					3
Orkney			X				1
Rockton		X			X		3
Sheffield			X		X	X	3
Strabane	X	X	X			X	5
Troy	X	X	X				4
Westover	X						2
Dickenson Road	X		X				3
Woodburn	X		X				3
Tapleytown		X	X		X		4
Vinemount	X		X				2
Binbrook	X	X	X			X	4
Mount Hope			X			X	2
Greensville	X	X	X			X	4

Table 6.3

EVALUATION OF SOCIAL AND TRANSPORTATION IMPACTS

Settlement	Community Character	Social Impacts			Transportation Impacts			
		Education	Recreation	Social Services	Health Services	Bus Services	Roads	Score
Alberton			X			X		2
Carluke		X						2
Copetown		X	X					2
Jerseyville	X	X				X		2
Southcote		X	X					3
Carlisle	X	X		X	X	X		3
Brockview		X		X				4
Flamborough		X						3
Centre	X	X		X	X			4
Freelton	X	X		X				3
Harper's Corner		X	X					5
Kirkwall		X	X	X	X	X		2
Lynden		X						2
Millgrove		X	X	X		X		2
Mountsberg		X	X	X		X		4
Orkney	X	X	X	X	X	X		5
Rockton		X		X	X			4
Sheffield		X		X	X			5
Strabane		X		X	X	X		4
Troy		X		X		X		3
Westover	X	X		X		X		4
Dickenson Road		X	X	X	X	X		4
Woodburn		X		X		X		4
Tapleystown		X		X		X		3
Vinemount		X		X		X		3
Binbrook	X	X		X	X			4
Mount Hope		X		X				2
Greensville		X		X				1

Table 6.4

COMBINED EVALUATION AND GROWTH POTENTIAL

SETTLEMENT	PHYSICAL IMPACTS	ENVIRONMENTAL IMPACTS	SOCIAL TRANSPORTATION IMPACTS	SCORE	POTENTIAL
Alberton	2	1	2	2.6	2
Carlisle	2	1	2	2.6	2
Copetown	1	4	2	2.6	2
Jerseyville	1	5	2	3.0	3
Southcote	1	3	3	2.4	2
Carlisle	1	3	3	2.4	2
Brockview	2	2	4	3.2	3
Flamborough Centre	1	3	3	2.4	2
Freelton	0	2	4	1.2	1
Harper's Corner	0	2	3	1.1	1
Kirkwall	2	2	5	3.4	3
Lynden	1	3	2	2.3	2
Millgrove	2	5	2	4.0	4
Mountsberg	1	3	4	2.6	2
Orkney	-	1	5	1.1	1
Rockton	3	3	4	4.6	4
Sheffield	2	3	3	3.4	3
Strabane	1	5	4	3.2	3
Troy	1	4	3	2.8	2
Westover	1	2	4	2.2	1
Dickenson Road	3	3	4	4.6	4
Woodburn	2	3	4	3.6	3
Tapleytown	3	4	3	4.8	4
Vinemount	2	2	3	3.1	4
Binbrook	3	4	4	4.9	4
Mount Hope	3	2	2	4.0	4
Greensville	2	4	1	3.5	3

Potential		Range of Scores	
1	good	0 -	2.2 High
2	satisfactory	2.3 -	2.9
3	fair	3.0 -	3.6
4	poor	3.7 -	over Low

6.4 GROWTH POTENTIAL OF SETTLEMENT AREAS

Growth potential, for the purpose of this study, is based on rural development criteria assessed by the evaluation method in Section 6.3. Sixteen factors or impacts were considered in measuring the physical, environmental, social and transportation characteristics of each settlement. The scores for each settlement area were grouped into four categories which indicate a ranking order from high to low growth potential; 1 being the high and 4 being the low growth potential category. This is further illustrated in Figure 17.

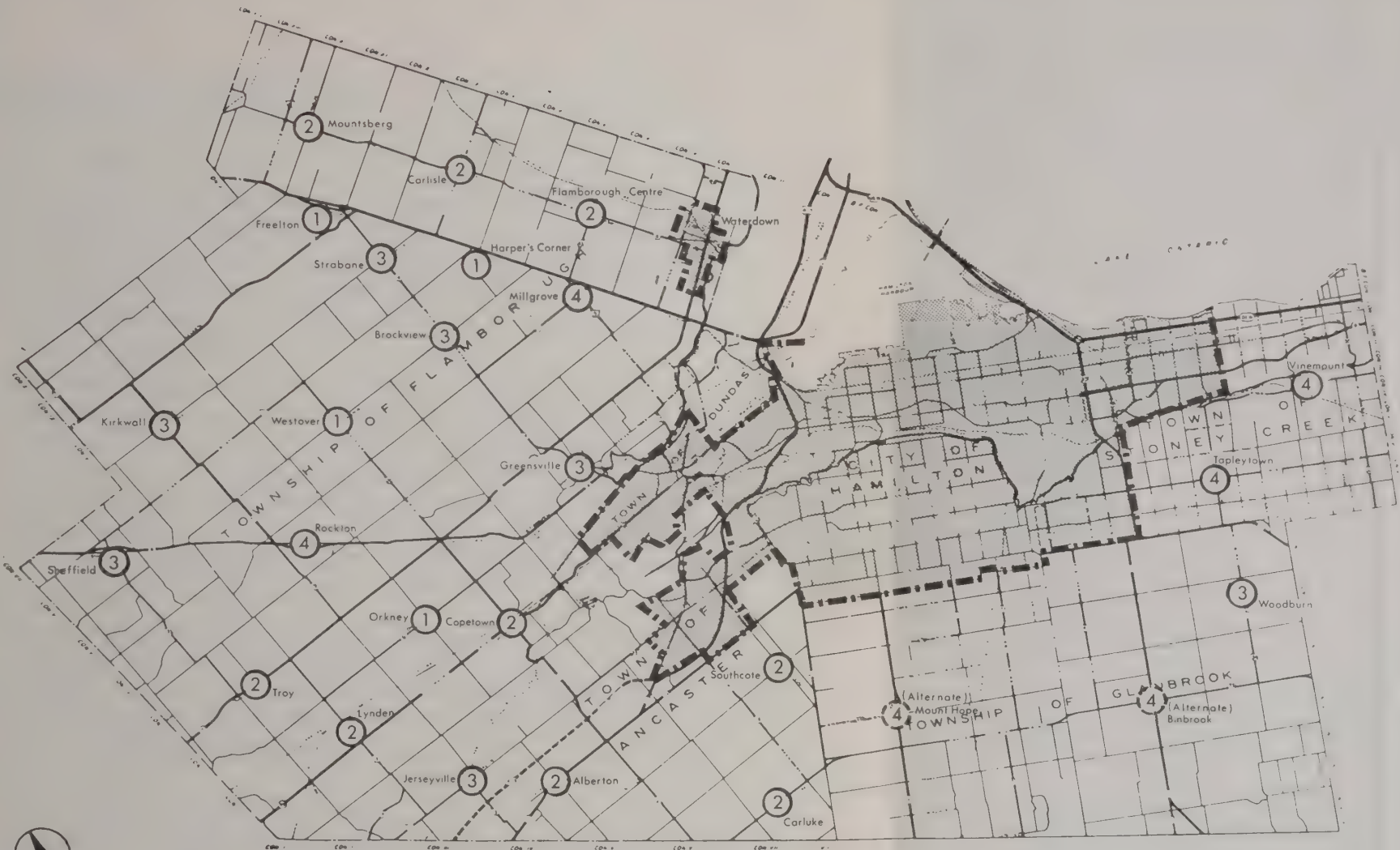
The ranking of growth potential does not necessarily indicate a larger or smaller area for future development, it indicates that the expansion of a settlement has a certain potential.

Development is usually based on service criteria, that is the availability of an adequate water supply and the capability of the soil to sustain septic tank tile fields. It was therefore assumed here that the potential for expansion depends, to a large part, on a low score in the evaluation of physical impacts. The four categories reflect this assumption by grouping settlement areas into the appropriate growth potential category. The growth potential of settlement areas by municipality is summarized in Table 6.4

LEGEND

- Urban Area
- Rural Area
- Boundary Between Urban & Rural Area

- Growth Potential
- High
- Low
- 1 2 3 4



Not To Scale

Sept. 76

Towards A Rural Settlement Plan
**SETTLEMENTS CLASSIFIED
BY GROWTH POTENTIAL**

Planning & Development Department
Hamilton - Wentworth Region

7.0 GROWTH PROPOSED IN THE RURAL AREA

7.1 POPULATION

The Rural Area will accommodate a comparatively small part of Hamilton-Wentworth's total regional population increase of 140,000 persons to the year 2001. Natural population increases in the Rural Area will require a relatively small number of dwelling units, all of which will be in low density development and distributed in an area approximately three times the size of the Urban Area.

The number of households in the Rural Area will probably increase by the year 2001 as there is a trend for the family size to decrease. It is estimated that the household size may decrease from 3.5 persons per household at present to 3.0 persons per household by 2001. Growth in the rural population will probably be offset by out-migration from Rural to Urban Areas. It is anticipated that these two factors will offset each other and the net effect may be a modest but relative constant natural increase in the rural population.

The effect of household growth (100 - 150 households per year) and the reduction in household size on rural population is detailed in a separate report.¹ The existing population and number of dwelling units, the population anticipated and the dwelling units provided in this proposal by the year 2001 are shown in Table 7.1.

7.2 HOUSING REQUIREMENTS

Based on the foregoing, it is projected that between 100 - 150 lots will be required per year in the rural areas to 2001. This would result in approximately 2,500 - 3,750 additional residential units over the next 25 years. The lower figure will result if the policy on land severances is made stricter and the higher figure reflects a slightly more liberal

¹Projected Housing and Population in the Rural Areas, The Planning and Development Department of the Regional Municipality of Hamilton-Wentworth, 1976.

TABLE NO. 7.1
NO. OF DWELLING UNITS AND POPULATION IN SETTLEMENT AREAS BY 2001

SETTLEMENTS	EXISTING NO. OF DWELLING UNITS	EXISTING POPULATION (3.5 PPDU)	PROPOSED NO. OF DWELLING UNITS			POTENTIAL NO. OF D.U.	ANTICIPATED POPULATION (3.0 PPDU)
			SUBDIVISION	INFILLING	TOTAL		
ANCASTER							
Alberton	30	105	45	2	47	77	231
Carluke	12	42	17	1	18	30	90
Jerseyville	105	367	76	3	79	184	552
Southcote	10	35	14	2	16	26	78
SUB-TOTAL	157	549	152	8	160	317	951
FLAMBOROUGH							
Copetown	95	332	45	8	53	148	444
Brockview	25	87	24	1	25	50	150
Flamborough Centre	75	262	150	3	153	228	684
Freelton	130	455	150	5	155	285	855
Greensville	710	2,485	-	25	25	735	2,205
Harpers Corner	25	87	173	-	173	198	594
Kirkwall	10	35	45	1	46	56	168
Lynden	165	277	150	-	150	315	945
Millgrove	120	420	40	1	41	160	480
Mountsberg	15	52	14	2	16	31	93
Orkney	25	87	100	-	100	125	375
Rockton	50	175	24	4	28	78	234
Sheffield	51	178	31	2	33	84	252
Strabane	30	105	8	1	9	39	117
Troy	18	63	35	-	35	53	159
Westover	20	70	36	9	45	65	195
Carlisle	300	950	200	-	200	500	1,500
SUB-TOTAL	1,864	6,420	1,225	62	1,287	3,151	9,450
GLANBROOK							
Dickenson Road	95	332	-	-	-	95	285
Mount Hope	285	997	-	25	25	310	930
Woodburn	92	322	16	5	21	113	339
Binbrook	98	343	-	25	25	123	369
SUB-TOTAL	570	1,994	16	55	71	641	1,923
STONE CREEK							
Tapleytown	24	84	26	2	28	52	156
Vinerount	12	42	26	2	28	40	120
SUB-TOTAL	36	126	52	4	56	92	276
TOTAL	2,627	9,089	1,445	129	1,574	4,201	12,600

policy. For the purposes of this calculation, the lower figure of 100 dwelling units annually was assumed.

An average of 80 lots per year were created by land severance since the formation of Regional Government. Recent records also indicate that an average of 50 lots per year were created in the Rural Areas under plans of sub-division. It was assumed that approximately 50 dwelling units of the total would be constructed annually on lands that would be severed. The balance would be constructed on land suitable for development in established settlement areas. Policies on land severance are presently being reviewed by the Land Division Committee and it is anticipated that a much stricter policy be required in the future with respect to random creation of lots in the Rural Area.

Tables 7.1 and 7.2 show the existing number of dwelling units for each settlement, the increases by proposed plans of sub-divisions, infilling possible by land severance and the total number of dwelling units proposed. These were established by examining each of the settlements individually. The dwellings built outside settlement areas - on lots created by severance - must be added in order to determine the total number of dwelling units to be created in the Rural Area.

Based on this analysis, it was concluded that total population in the Rural Area may remain relatively constant for the next 25 years, due to young people leaving farm areas for jobs and the amenities of the City. The lower number of persons per household, however, will result in the need for additional housing.

Table 7.2

RURAL AREA - POPULATION AND DWELLING UNITS BY MUNICIPALITY (2001)

MUNICIPALITY	EXISTING POPULATION	EXISTING NO. OF DWELLING UNITS (3.5 P.P.D.U.)	DWELLING UNIT INCREASE SETTLEMENTS OTHER TOTAL	TOTAL NO. OF DWELLING UNITS	TOTAL POPULATION (3.0 P.P.D.U.)
Flamborough	16,960	4,845	1,287 398 1,685	6,530	19,590
Dundas	1,352	386	- 28 28	416	1,250
Ancaster	3,488	996	160 84 244	1,240	3,720
Glanbrook	10,057	2,873	71 240 311	3,185	9,550
Stoney Creek	7,308	2,090	56 176 232	2,320	6,960
TOTAL	39,165	11,190	1,574 926 2,500	13,691	41,070

8.0 PROPOSED GENERAL RURAL PLAN

The following chapter discusses the various types of development possible within the Rural Area. Development is only discussed in terms of approximate sizes and locations, since specific sizes and locations can only be determined after the goals are adopted for the Regional Official Plan. Therefore, the areas and locations shown should be regarded as an attempt to show the "most likely" location of development as shown on Figure 18 - Proposed General Rural Plan.

8.1 SETTLEMENT AREAS

Settlements are well established in the Rural Area. Most settlements function as residential centres for non-farm residents and also serve as social and service centres for the surrounding countryside. Some centres, as discussed in Chapter 4 of this report, have a number of functions. Generally, settlements provide lands for people who, by choice, wish to live in the countryside. Expansion of settlements would be a means by which good agricultural land could be preserved and by which non-farm residential developments could be absorbed.

Often when settlement areas are discussed, Mobile Home Parks are forgotten as another kind of settlement area. Mobile Home Parks should be considered and evaluated on the same basis as all other settlement areas in the Rural Area. Appendix I provides information concerning the development of Mobile Home Parks in the Rural Area.

This report proposes the expansion of the existing settlements on the basis of their suitability, the hierarchical order of the centre and, generally, by the recommended goals included in the inventories and substudies for the Regional Official Plan.

Each settlement area was evaluated separately, taking into consideration the various constraint factors as discussed in Chapter 6. To enable development to occur in an orderly fashion, areas for future expansion were chosen abutting or close to the major functions of settlements or growth areas. To avoid lineal expansion, development is located on only one side of an existing arterial road where possible.

The proposed expansion of settlement areas is based on the assumption that development will not unnecessarily encroach into areas which should be protected or preserved. Four settlements, Greenville, Winona, Binbrook and Mount Hope warrant a separate discussion.

Greenville has exceeded the maximum desirable population for sanitary disposal purposes by septic tile systems. Future development, therefore, would be possible only on full municipal services. It is therefore proposed that Greenville be considered as an urban area. Potential additional development shown for Greenville in Table 7.1 indicates minor infilling only.

Winona is serviced by a municipal water supply and one area, Gardendale Survey, has sanitary sewer services connected to a communal lagoon. The unsuitability of the soil to sustain additional septic tank tile systems and existing health difficulties do not allow further development on the basis of individual lot servicing. Future development is only possible if municipal sanitary services are provided. It is therefore proposed that Winona be considered as an urban area.

LEGEND

- Boundary Between Urban And Rural Area
- Urban Area
- Settlements
- Estate Residential
- Agricultural
- Marginal Agricultural Areas
- Environmentally Sensitive Areas
- Open Space
- Extractive Industries



Not To Scale

Towards A Rural Settlement Plan
PROPOSED GENERAL RURAL PLAN

Planning & Development Department
Hamilton - Wentworth Region

In view of the acceptance and corresponding positive reaction of politicians and community key contacts to a survey on Regional Development Goals, and in particular to the Goal "to protect prime agricultural land and fruit producing areas", the subject proposal reflects opinions expressed. However, it is also realized that Regional Council may reassess this goal in the future. The possibility of the ultimate urbanization of the fruitland area was therefore recognized in the Eastern - Alternative Plan No. 2¹ which included the Winona - Fruitland area as a future developed area.

Further growth of Binbrook is not recommended because of the existing adverse conditions with respect to individual well systems and septic tile systems. Significant growth for this settlement is not recommended since no municipal services are available. However, it is suggested that infilling may be permitted on a limited basis.

Mount Hope has been developed on the basis of individual services. An expansion of this settlement is not recommended unless an adequate water supply can be assured. Further development in this settlement area is suggested on the basis of limited infilling.

Three areas indicated in the Settlement Capability Study have been put in reserve since there is adequate room for development in the existing settlements to the year 2001. The three additional areas have not been shown but should be kept in reserve for future residential use beyond the 25 year period.

8.2 AGRICULTURAL AREAS

The existing settlement areas and proposed expansions collectively use a large acreage of soil classes 1 and 2. Other types of development, such as environmentally sensitive areas, hazard lands, open space and mineral resource areas, are also located within the area of soil classes 1 and 2.

The prime agricultural areas (lands in soil classes 1 and 2) are located in Glanbrook and in parts of Ancaster, Dundas, Flamborough and Stoney Creek. Lands in soil classes 3 to 7, and 0, are located primarily in the northerly part of Flamborough, abutting parts of the Dundas Valley and in the easterly parts of Stoney Creek. The easterly part of Stoney

¹ Source: "Alternative Regional Plans (Preliminary)", Memorandum No. 332 as presented to the Hamilton-Wentworth Regional Planning and Development Committee, April 26, 1976

Creek (Winona-Fruitland area) north of the Niagara Escarpment is recognized as the fruitland area and should be protected and preserved for this purpose.

The fruitland area does not include lands in soil classes 1 and 2, however, soils in this area are suitable for fruit growing. Another important factor is the climatic condition of this area. The moderating effect from off-shore Lake Ontario air currents prevent and hold off frosts and retard early blossoming, which are important for tender fruit trees. This is the only area in the Region which has this unique climatic condition.

8.3 ENVIRONMENTALLY SENSITIVE AREAS AND OPEN SPACE

Various reports, such as the Environment Inventory, Environmentally Sensitive Areas, etc., have discussed such topics as hazard lands and environmentally sensitive areas, open space and recreational areas.

Public and private open spaces are located primarily in areas of the Region which have physical characteristics appropriate for this use. These include the Beverly Swamp, Spencer Creek, Bronte Creek, Dundas Valley, Welland River and the Niagara Escarpment. Additional lands have to be considered to complement the existing public open spaces in light of the Region's projected increase in population growth. Examples of these additions are the 50 Point Park Area and some of the environmentally sensitive areas in Flamborough. Other environmentally sensitive areas should be protected and preserved wherever possible. These areas are shown as open space on the General Rural Plan, Figure 18.

8.4 MINERAL RESOURCE AREAS

The future demand for mineral resources will increase with growth in the Region. This conclusion is based on various substudies of the Regional Official Plan and the study prepared by the Ministry of Natural Resources. These indicate the location and quality of mineral resources in the Region¹, and it is evident that the existing Regional gravel and sand deposits will be inadequate

¹ Mineral Resource Survey, Hamilton-Wentworth Planning Area, Ontario Ministry of Natural Resources (1974)

by 1986. Stone aggregate resources (limestone deposits) however, will be available beyond the year 2001.

The stone aggregate areas are located in Stoney Creek and Flamborough. The areas to be considered for extraction are in Stoney Creek abutting the existing quarry in part of lot 5-8, Con. V, and in Flamborough abutting the quarries in part of lots 10-11, Con. III, and lots 1-9, Con. IV. This would provide aggregates from two areas supplying the easterly and westerly section of the urban growth area.

All of the gravel and sand deposit areas located in Flamborough should not be developed for any purpose other than extraction. Some minor deposits in Ancaster will be exhausted in the near future. The areas suggested for extractive purposes are shown on the General Rural Plan, Figure 18.

8.5 TRANSPORTATION

Settlement expansion and general growth in the Rural Area may have some impact on the existing transportation facilities - creating a demand for additional services. Development as recommended in this study, will not adversely affect the existing Regional road system, but improvement and maintenance work can be expected as a demand of general growth in the Rural Area.

The existing Hamilton Civic Airport is located in the Rural Area and is presently the subject of an extensive study regarding its expansion and/or relocation. Two of the proposed sites are located in the Rural Area, while another four sites abut the Rural Area at the southerly and easterly boundaries of the Region. The airport site selected will affect surrounding land use and future development. The implications of the alternative sites under consideration are discussed in Section 8.8.

8.6 NON-FARM RESIDENTIAL DEVELOPMENT

A comparatively large segment of the rural population is housed outside the settlement areas in farm-residential and non-farm-residential dwelling units. Of great concern is the movement of people into the countryside. Residential growth in the Rural Area is directed and guided to occur in settlement areas in this proposal. But it is realized that some growth will continue to occur in the agricultural area. This plan proposes to direct non-farm residential growth into those areas which would avoid:

- break-up of agricultural holdings
- urbanization of agricultural land
- urban sprawl through lineal and isolated non-farm residential development
- utilization of natural resource areas for non-farm residential purposes

Areas suitable for limited non-farm residential development are those areas which are not affected by any physical and/or environmental constraints. The type of non-farm residential development is a low density and low intensity estate type of residential development. Four areas were evaluated on the basis of existing data for this purpose.

Area A is located in part of lots 1-4, Con. X and XII, in the former Township of East Flamborough, now the Township of Flamborough. The area is within the marginal agricultural soil class number 6.

The Settlement Capability Study identified the soils as class E with respect to residential development capability, which requires a minimum lot size of 1.25 acres.

No physical characteristics exist in this area which would be adversely affected by this type of development,

Area B is located in part of lots 29-30, Con. V in the former Township of Beverly, now the Township of Flamborough.

The area is within the agricultural soil class number 3.

The Settlement Capability Study identified the soils as class E with respect to residential development capability which requires a minimum lot size of 1.25 acres.

This area abuts a limestone plain and may have isolated shallow overburden. The northern section of lots 29 and 30 are not useable due to the swampy and marshy conditions of the terrain.

Area C is located in part of lots 26-30, Con. III in the Town of Ancaster.

This area is within the agricultural soil class number 3. The Settlement Capability Study identified the soils as class C and F. Class C soil requires a minimum lot size of 0.5 - 1.25 acres, and class F soils require a minimum lot size of 2.0 acres.

No physical characteristics exist in this area which would be adversely affected by this type of development.

Area D is located in part of lots 22-27, Con. II, former Township of West Flamborough, now the Town of Dundas.

This area is within agricultural soil class 1. The physical characteristics of the land, which is crossed by a number of small watercourses, prevents this area from being used extensively for farming. The use of this area for low intensity residential development would provide a compatible land use between Cootes Paradise and the Niagara Escarpment. Based on development by estate type lots and a municipal water supply, development would utilize certain plateau areas (between the watercourses or hazard lands and the existing wooded areas), and could provide a link between the public open spaces of Cootes Paradise and the Niagara Escarpment. The location of these four areas is shown on Figure 18.

8.7 OTHER TYPES OF DEVELOPMENT IN THE RURAL AREA

It is anticipated that gradual growth in the Rural Area will require other types of development beside those directly related to resource base uses such as farming, mining, etc. Services related to the other types of development should at least indirectly relate to the resource base and service the rural population in relation to the Functional Hierarchy described here. Examples of these services are human services - doctors, farm services, farmers' co-ops, etc.

8.8 AIRPORT IMPLICATIONS

The future location of an airport site is an important factor in the distribution of growth. It is necessary to consider a series of contingency plans until all alternative airport sites have been examined in detail and the Airport Technical Committee puts forth a recommended site for local consideration.

However, certain "conditional" conclusions regarding possible social disruption to new development can now be drawn from the information shown on Figure 6. Aircraft noise can disturb sleep, privacy, rest and communication, and in so doing, may be considered a significant social disruption. It should be realized that a noise offensive to one person might not be so to another because in assessing his annoyance the individual takes into account many factors including intensity, frequency of occurrence, duration, etc. Because of varied individual reactions to noise, any system for determining "undesirable" noise levels must be based on the reaction of the "reasonable" or "average" person.

The system currently used by the Federal Ministry of Transport for determining acceptable noise levels is the Noise Exposure Forecast (NEF). The calculation of NEF is based upon the types of aircraft using the airport and the noise they generate, the number of take-offs and landings on each runway, and the time of day when these take-offs and landings occur. It can be thought of as a measure of the amount of annoyance resulting from aircraft operation. Figure 6 shows the NEF contours for each airport alternative based on the forecasted 1990 aircraft operations.

In order to evaluate the impact of the NEF contours, the standards adopted by the Central Mortgage and Housing Corporation have been used. These standards are as follows:

- a) Where NEF values are greater than 35, new housing should not be constructed.
- b) Where NEF values are between 28 and 35, new housing should not be constructed unless adequate sound insulation is provided.

Therefore, it has been assumed, for the purposes of this report, that where NEF values are equal to or greater than 28 (or in the immediate vicinity of such NEF values) social disruption can be expected to occur.

Using the above standards, some "conditional" conclusions can be reached regarding the social disruption which would occur in existing and new residential development in the Rural Area.

The "conditional" conclusions are as follows:

- a) Existing and future residential development in the villages of Mount Hope, Carluke and Southcote and their immediate vicinity can be expected to experience some social disruption from the noise generated by aircraft operations if Concepts 1, 2, 3 or 4 for the Mount Hope Site were selected for the future airport.
- b) An airport located at any of the remaining alternative sites (14A, 14B, 15, 20 or 21) can be expected to cause little social disruption (due to noise) to existing or future development in villages or settlement areas within the Hamilton-Wentworth Region. However, some social disruption (due to noise) could occur to existing and future development outside of existing villages and settlement areas in the following locations:
 - in the vicinity of Highway 6 adjacent to the southern limits of the Township of Glanbrook from air traffic operations at Site 15
 - in the southeastern portion of the Township of Glanbrook, immediately adjacent to the southern and eastern township limits, from air traffic operations at Site 20

- in the western portion of the Township of Glanbrook, adjacent to the western limits of the township, from air traffic operations at Site 14A

8.9 DISTRIBUTION OF GROWTH

Growth in the Rural Area is based on the assumptions that:

- about 100 to 150 low density dwelling units will be required annually, or 2,500 to 3,750 dwelling units until the year 2001
- the population will not increase significantly
- development will shift to the settlement areas proposed

Within local municipalities, development would result in an increased demand for some urban-related services in the settlement areas. The provision of these urban-related services will involve costs which should be fully realized. These costs will be in proportion to the additional population housed in the Rural Area - and their distribution. The most substantive costs will be for providing Community Facilities and Social Services to a reasonable standard.

Distribution of Development

Because of the physical and environmental characteristics of the Rural Area, rural growth is now concentrated in the West. The southerly and south-easterly sectors, part of Haldimand-Norfolk Clay Plain, have adverse and unsuitable soils and ground water resources which do not justify the expansion of settlements in these areas. However, this would not exclude restricted development through land severances which would be subject to a detailed evaluation of any site. Development of lands in the prime agricultural area, the lands to be protected and preserved for food production, would be limited. These lands are predominantly in the southerly and south-easterly sectors of the Rural Area.

The Settlement Evaluation (Chapter 6) indicates a number of constraints which would affect the growth and development of settlement areas. Based on this evaluation and other factors such as the proposed expansion of the airport in one of the six eastern locations within the Region, it was felt that two basic distributions of growth would be viable.

The "Rural Growth Trend", based on past trends of the Rural Area would distribute growth fairly evenly throughout all of the settlements. On the other hand, the "Western Concentration" would concentrate growth in Flamborough.

At this point in time, before the airport study recommendations have been formulated by the Technical Committee and considered by the Region, it is premature to arrive at more specific recommendations. However, the conclusion may be drawn that, if either Site No. 10 or 15 is ultimately selected, the "Western Concentration" appears to be the most viable. Incompatible land uses related to any airport site create conflicts. To keep the area in the vicinity of an airport in very low rural density and agricultural use would eliminate possible future conflicts.

Advantages of the western sector of the Rural Area, such as soil characteristics suitable for sustaining septic tile systems, higher probability of ground water supply, a better quality of ground water, a larger number of ground water recharge areas, make this area a better area for additional rural development. The general rural landscape and landforms are additional favourable attributes.

It is realized that most environmentally sensitive areas are located in the western sector. However, with careful evaluation of constraint factors, areas can be selected for settlement expansion which would not result in development contrary to established Regional Goals.

8.10 PROVINCIAL POLICIES

This proposal adheres closely to the Provincial policies regarding the preservation of agricultural lands, environmentally sensitive areas, etc. The following briefly outlines Provincial policies as they relate to Hamilton-Wentworth:

Design for Development - Toronto Centred Region was made public in May, 1970. This document determined three zones of geographic and functional structure for the Toronto Centred Region. Options proposed for the Urban Area of the Region are compatible with zone one of the Toronto Centred Region. The Rural Area, zone three of the Toronto Centred Region, was determined as follows:

"iii) The peripheral zone is that belt beyond the commuter-shed which is still well within the orbit of highly specialized influences of the metropolitan core. Its economy is tied to the Region's core, and it acts as an open space and recreation territory for the urban population."

The policy recommended for the peripheral zone (zone 3) only encouraged modest growth in the west but it was expected that spontaneous growth would occur in the western and southern parts of the peripheral zone and along the western segment of zone 1.

Toronto-Centred Region Statement of March, 1976, states the following under the Area Planning Issues:

"A. The Regional Municipality of Hamilton-Wentworth

The Regional Municipality of Hamilton-Wentworth, generally speaking, represents the western terminal of the Toronto-Centred Region. It is a strong Regional centre, whose influence extends well beyond the boundaries of the Toronto-Centred Region. The government's policy is to encourage the Regional Municipality to develop as a Regional Centre in its own right, subject to Provincial policies relating to preserving prime agricultural land and recreational resources."

This would indicate that settlement of the Rural Area is not contrary to the intent of the Toronto-Centred Region Plan if adequate consideration is given to the preservation of prime agricultural land and recreational resources.

Government Policy for the Niagara Escarpment was published in June, 1973. The Environmental Inventory previously prepared by the Regional Plan Division, showed the Niagara Escarpment Development Control Area. Three settlement areas, namely, Vinemount, Copetown and Greensville, are located within the Development Control Area and are subject to existing Development Control Guidelines of the Niagara Escarpment Commission.

Government Policy for the Parkway Belt West was also published in June, 1973. Part of the Parkway Belt West is shown as a Complementary Use Area described as the following general land use category:

"The Complementary Use Area comprises areas that will be maintained or developed in uses that are compatible with and assist in the attainment of the objectives of Parkway Belt West. In general, such uses will be low-density and low intensity in nature so as to maintain the rural, non-urban character of Parkway Belt West."

An area in the Town of Dundas, located generally between Rock Chapel Road and Highway No. 6 and the Niagara Escarpment and Cootes Paradise, is within this Complementary Land Use Area.

Because of the fracturing of land by adverse topographical features and the existing watercourses, this land has little agricultural value. The land has remained fallow for some time - resulting in physical deterioration of the surface soils. A better use should be established for this land within the objectives of the Parkway Belt West.

9.0 PLANNING GUIDELINES

9.1 OBJECTIVES

One of the objectives of a Settlement Plan is to minimize the cost of public services. The concentration rather than dispersion of development is the means by which this objective can be attained. It is an approach which will also minimize the impact of urban development in the Rural Area.

This section describes the criteria for development of Settlement Areas which were used in preparing this proposal. These criteria are expressed in terms of social, economic and land use considerations. The potential of each Settlement Area for development was reviewed on the basis of these criteria. They may also be used in the preparation of local official plans.

New development affects existing land uses and these abutting areas. Within settlements, the type, the location and the timing are all necessary factors which must be considered. The criteria are measurable quantities and qualities which are essential for a community. The proposed Rural Plan is based on the following criteria and objectives:

Sanitary Disposal System:	to ensure suitable soils for septic tank and tile field systems.
Water Supply:	to ensure the availability of an adequate ground water supply.
Solid Waste Disposal:	to ensure the provision of new sanitary land fill sites.
Mineral Resources:	to preserve mineral resource areas.
Agriculture:	to preserve adequate prime agricultural lands for the production of food.
Forests:	to ensure suitable forested areas and woodlots capable of timber production.
Hazard Lands:	to prevent development in hazardous lands.
Environmentally Sensitive Areas:	to preserve environmentally sensitive areas.

Open Space:	to select possible areas for open space purposes.
Ground Water:	to maintain a sufficient ground water supply for existing and future development.
Surface Water:	to protect surface water bodies from detrimental effects on their eco-system.
Transportation and Utilities:	to ensure an adequate transportation system and to recognize the needs for public utility facilities.

9.2 EMPLOYMENT

The issue of more employment in the Rural Area was raised in the chapter describing existing development in the Rural Area. At present, the Rural Area provides an insufficient number of jobs for its residents.

Locating new sources of employment in the Rural Area would not guarantee that rural residents would be hired for those new jobs. Furthermore, some employment generators such as a large manufacturing plant, if located in the Rural Area may conflict with existing land uses there - especially agricultural use. Nevertheless, it is necessary to permit the growth of developments related to natural resources (e.g., agriculture and mining) in the Rural Area. It is also necessary to permit those developments which would service rural residents. It is proposed that all other job creating developments be located within the urban area where they can be more easily serviced. The optimal arrangement would be to concentrate industrial development in industrial parks well related to urban places of residence and major regional transportation services.

The proximity of urban employment centres within the Region immediately adjacent to the Region (e.g., Cambridge, Brantford and Guelph) should also provide a sufficient number of jobs for residents of the Rural Area who cannot find employment in that area.

Therefore, it is recommended that only those sources of new employment which are either related to the natural resource base of the Rural Area or to the servicing of the rural population should be permitted in the Rural Area.

Exceptions to this general rule could be permitted if a job generating activity which was not related to the natural resource base of the Rural Area nor served the rural population of that activity did not adversely affect the rural resources, e.g., prime agricultural land, environmentally sensitive areas, etc.

9.3 AGRICULTURE

As previously indicated (Chapter 5.7), lands in soil classes 1 and 2 comprise approximately 165,000 acres in the Rural Area. It is recommended that agricultural lands within soil classifications 1 and 2 be preserved, wherever possible. Although the areas of tender fruit are not within the above soil classes, as they are not field crops, it is vital that they also be preserved.

9.4 MUNICIPAL SERVICES

General

Many settlement areas are facing pollution problems due to the malfunctioning of septic fields. Shortage of water supply and/or contamination are prevalent in some areas such as Mount Hope and Pleasant View Survey. These problems exist because development, in the past, did not strictly respect the long-term limitations of the disposal of effluents into the ground, and the limitations of ground water to support a certain size development.

Quite frequently, development was permitted on the basis of very general standards, without regard to local variations. One example which can be cited is the requirement of a minimum lot size of 20,000 sq. ft. in the rural areas. The findings of the Settlement Capability Study completed recently, indicate that the minimum lot sizes should range between 0.5 A to 2.5 \pm if the long-term capacity of soils and ground water

are used as criteria. It is therefore clear that the lot sizes permitted in the past were not in conformity with the carrying capacities of the natural terrain which resulted in public health problems in many areas - but based on Provincial Regulations.

For the purposes of this proposal, it is suggested that future servicing policies should be such that they adequately provide future residences with water supply and sewage disposal. The service level (lot sizes, etc.) for each community should be such that the community should not require the provision of major trunk services by the Region in the future due to malfunctioning of local systems.

Based on the findings of the Settlement Capability Study, the following criteria are suggested, based on a vertical separation between the water table and the septic tank as a determinant of lot size:

SOIL TYPE	SEPARATION BETWEEN SOIL COVER AND WATER TABLE	MIN.SIZE LOT RECOMMENDED	SEPTIC TANK SUITABILITY
Coarse granular, sandy loam, sand having good permea- bility and perco- lative capacity	25 ft. but not less than 20 ft.	0.5 A [±]	good
Clay till or gran- ular till having a fair perco- lative capacity	with 25 ft. but not less than 12 ft.	0.5 A for granular tills, 1.5 A for clay tills	fair
Clay soils with fair to poor perco- lative capacities	less than 12 ft.		poor
Shallow swamps, high bedrock areas			No development

Other combinations of soil types and depth to ground water may exist, each requiring a consideration on its own merits. Generalized septic suitability is shown in Figure 3.

Servicing Standards

The following servicing standards are recommended to be used as criteria in permitting additional growth in Settlement Areas.

For Settlement Areas where public health problems are known to exist, no additional development should be permitted. The first priority in these cases should be the solution of existing problems.

1. Water Supply

For settlements where the ground water aquifer is to be utilized, either on an individual or communal well basis, it is the aquifer capability that should be taken as a guide for the ultimate size of the community.

Individual and communal water systems that utilize the ground water aquifer are limited by the "recharge" capability of the aquifer. The average home utilizes a maximum of approximately 360 gallons of water per day with no allowance for lawn watering. On this basis, as an example, if an aquifer has an estimated capacity of 25 gallons per minute, it can only support a maximum of 100 homes. If this limitation is respected in permitting development, long-term availability of water can be anticipated.

2. Sewage Disposal

It is suggested that the minimum lot sizes to be provided in the settlement areas should be based on the adequacy of the soil conditions for the inground disposal of the sewage effluent. The design of the septic tank and tile field systems should be such that the effluent is not discharged into either surface or ground waters.

9.5 TRANSPORTATION

In evaluating proposals for development, the impact of proposed transportation facilities on development as well as the impact of proposed development on transportation facilities should be considered.

Roads

Existing and future development in the Rural Area should be provided with an arterial road system which ensures adequate access to employment, shopping, health, social services, cultural and recreational activities.

The number of private accesses to arterial roads should be kept to a minimum so as to preserve as much as possible their capability for accommodating through traffic safely and efficiently. This can be accomplished by encouraging commercial and residential development to locate in planned areas which utilize common accesses; and by discouraging strip development.

Furthermore, since continued development in the vicinity of the major intersection of arterial roads in existing hamlets will create future circulation problems for the hamlet, consideration should be given (in the evaluation of development proposals) to providing a circulation system which allows the flexibility of implementing a by-pass facility at some future date without disrupting development.

Public Transit

It is not anticipated that scheduled public transit service will accommodate any significant amount of the future travel originating in the Rural Area and, therefore, the major transportation planning criteria to be applied in determining preferred locations for new rural development will be road related criteria. Nevertheless, some consideration in determining the location of new rural development, particularly low income and senior citizen housing, should be given to the availability of transit service. Appendix G.1 shows the location and frequency of existing transit service and the existing settlements directly served by this service.

Airport

The Federal Ministry of Transport has proposed that an enlarged airport be provided to serve the Hamilton area. As previously indicated, Figure 3 shows the location of the alternative airport sites under study and the Noise Exposure Forecast contours for each alternative site. The Noise Exposure Forecast system used by the Canadian Air Transport Administration takes into account not only the amount of noise but also the number of times the noise occurs and the time of day or night at which it occurs.

Appendix G.2 provides guidelines for assessing the compatibility of various land uses in the immediate vicinity of the alternate airport sites under study.

9.6 MINERAL RESOURCES

The existing mineral resources as outlined in Chapter Five indicates that there are an estimated 26,930 million tons of stone reserves and 57.5 million tons of gravel reserves in Hamilton-Wentworth. There are also potential sites for future quarry development as indicated in the "Mineral Resource Survey for the Hamilton-Wentworth Planning Area".

Potential sites for future quarry development (stone aggregate) suggested in the survey are as follows:

1. The area just south of the Vinemount Moraine and north of the Elfrieda Moraine in the vicinity of the existing Armstrong Holdings Ltd. Quarry. The overburden is thin and the stone quality is acceptable.
2. The area around Hayesland in the former Township of West Flamborough has thin overburden and good quality dolomite of the Guelph Formation.
3. Much of the Beverly area has thin overburden and an acceptable quality of stone resources. Areas mentioned are in the vicinity of Rockton, Sheffield, Troy and Valens.

Approximately 505 additional acres of quarry land are required by the year 2001, based on the present rate of use. The method of calculating the required acreage is presented in Appendix C.

It was estimated that the existing reserves in the Region will be depleted by 1987, and will be sufficient only for Regional needs. Flamborough is the only area of significant gravel reserves, in particular, the approximate area of Flamborough Station, Freelton, Harpers Corners and Progreston Road. The Mineral Resource Survey suggested that appropriate zoning regulations should be enacted to protect this area and some smaller deposits in the northern section of East Flamborough so that they remain available for extraction for future local demand.

9.7 ENVIRONMENT

Environmental aspects including Hazard Lands, Environmentally Sensitive Lands and Forested Areas are included in the following discussion and definitions.

Environmentally Sensitive Areas and Open Space

These are lands which have a variety of assets such as scenic value, wildlife habitat and unique plant and tree characteristics. The criteria from the Environmentally Sensitive Area Study is in Appendix F of this study. A number of Public Open Space areas are also environmentally sensitive areas. Those areas which are subject to protective measures can also be considered for open space purposes, where feasible.

Hazard Lands

Lands which include floodplains, marshy areas, areas which are susceptible to erosion or which have other adverse physical characteristics should not be considered for residential purposes. The Environment Inventory Substudy includes Hazard Land criteria which is in Appendix E of this study.

Forests

Productive forested areas capable of timber production should be considered for this use while lands with a minor growth of trees or unsuitable for production could be considered on the basis of their environmental values. A criterion for the selection of prime woodlots is in Appendix D.

9.8 COMMUNITY FACILITIES AND SERVICES

Recreation

Local

- a) In lieu of standards created for urban areas, parks and facilities should continue to be provided based on the need for a greater variety of facilities and interest generated in specific settlement areas - a local municipal decision.
- b) It is recommended that where possible, capital intensive facilities be provided in conjunction with schools, to maximize the use of facilities and to minimize costs (Education Act).
- c) Parks and recreation facilities should be located within walking distance of residents in settlement areas.

Regional

- a) Regional parks and reserves and golf courses should be located at two levels of accessibility and on the best resources available:
 - i) Regional parks within 15 - 30 minute drive providing activities such as overnight camping, picnicking, fishing and swimming if water is available. These facilities should also provide winter sport activities such as cross country skiing.
 - ii) Reserves should be located within one hour's driving time and be available for extensive recreation activity such as hunting, snowmobiling and nature appreciation.
- b) Maintenance of the present high level of 20+ acres per 1,000 population of Regional open space.

Protective Services

Police protection is now provided on a Regional basis. All Settlements will receive appropriate Police services.

Fire protection will be provided by local fire departments. A sufficient quantity of water should be provided in Settlement Areas, as determined by municipal departments. This is a local responsibility.

Health and Social Services

In the past, health care planning has been facility-based. It is currently being shifted to one based on population. This is the result of policy changes in the Ministry of Health.

The Hamilton District Health Council acts in an advisory capacity to the Ministry of Health. According to their terms of reference, the newly-formed Health Councils in Ontario may be described as "the local planning arm" of the Ministry of Health¹,

In the Social Services there is not the same mandate for planning and a similar organizational arrangement at the local level.

Health

A. Criteria

Availability and accessibility to the nearest family physician's office and emergency services (the nearest general hospital) have been selected as the planning criteria for health care.

B. Application

Hamilton has been designated as a Regional Health Centre. Rural residents are assured of the availability of specialized services at the Regional level.

For rural residents, the focal position in health care is held by the family physician. Hamilton-Wentworth rural residents go to family physicians within and outside Regional boundaries. The number and locations of practices are shown in Appendix J.1.

¹ Ministry of Health, Ontario, The District Health Council, 1975.

Ten minutes' travel by car to the nearest family physician's office has been selected as a measure of accessibility. Figure 7 (previously presented in Chapter 5) illustrates the following:

- 1) The areas from where residents can reach the nearest physician's office by car in ten minutes.
- 2) The areas from where residents are unable to reach the nearest physician's office by car in ten minutes.

It seems most rural people are within the ten-minute measure of accessibility. Those outside the standard include residents in Kirkwall, Sheffield and Rockton, and in the area north and parallel to Highways 8 and 5 to the corner of the Brock Road. The other is the area above the escarpment in the south-eastern part of Stoney Creek.

Emergencies defined as "a matter of life and death" are currently treated in General Hospitals. Emergency services available to rural residents are located in the five General Hospitals in Hamilton and those in Brantford, Burlington, Cambridge and Grimsby. Twenty-minutes' travel time by car to the nearest service has been selected as the measure of accessibility. A substantial portion of the northern central area surrounding Freelton in Flamborough is outside the standard, as is the south-eastern part of Glanbrook, including Binbrook.

C. Impact

This simplistic measure of accessibility for both the nearest family physician's office and emergency service would seem to provide a reasonable standard for future comparisons in health care delivery. The fact that the provision of health care spills over municipal boundaries is a factor in determining the rural health care model and a delivery system for the future.

Social Services

A. Criteria

Availability of Access (Information and Linkage) Services at the level of the local municipality has been selected as the planning criteria for social services.

B. Application

The majority of helping services is located below the escarpment in Central Hamilton¹. Services in other centres have been identified by type in Chapter 5, Table 5.8, page 37.

Delivery patterns for these services range from initial home visits to office appointments only. Rural-oriented people are not likely to be as aware of the availability of services as their urban-oriented counterparts. For this reason, as well as those mentioned in Chapter 5, Access (Information and Linkage) Services are generally perceived as essential services.

Access Services by municipality according to delivery level are shown in Appendix J.2.

The urban and rural centres where Access Services are delivered at the level of the local municipality are shown in Appendix J.3.

The majority of Rural Hamilton-Wentworth residents are without Access Services (Information and Linkage) Services at the local level.

C. Impact

This measure of accessibility for Social Services in the Rural Area would seem to suggest a reasonable standard in service delivery. The gaps in the provision of Access Services affects health care delivery as well as Social Services. This situation points to the need to create a viable plan for their provision in the Rural Area now and for the future.

¹Queen Street to Sanford Avenue

Education Criteria

Consideration of rural settlement expansion must be preceded by an evaluation of the ability of the existing school system to accommodate the future school-age population. Though this is not the responsibility of Regional Government, it is an important consideration in the preparation of a Regional Official Plan. We therefore suggest that the following criterion be considered for such an evaluation:

Criterion - School enrolment projections compared to existing school enrolment capacities as identified in Appendices A.4, A.5 and A.6.

A. Application of Criterion

To estimate the projected school enrolments in the Rural Areas by the year 2001, the approach used will be the pupil/dwelling unit factor method as described in the Education Inventory. The method assumes that each dwelling unit will yield school-age children, the number of children depending on the type of unit.

Using the projected number of dwelling units, projected elementary and secondary school enrolments can be calculated. We have assumed that all future rural dwelling units will be single family. Presently, with an average of 3.5 persons per household, each household yields 1 child. We are assuming that in the future the persons per household will decrease to 3.0, with each household thus yielding .86 children.

B. Impacts

As indicated in Appendix A.8, most of the existing schools serving rural areas will be unable to accommodate the future rural school-age population. In most cases, this impact may be linked primarily to the inability of these schools to handle the increasing number of children coming from the urbanized areas.

It is difficult to determine when the existing schools will be full. Such variables as staging of development, decreasing birth rates, and and future school board policies make it difficult to project when

the impact will be felt and to what extent. In addition, the fact that two school boards presently serve the rural areas poses a problem in estimating what percentage of the future enrolment each board will accommodate. Since this matter is of regional scope (the rural service area boundaries and catchment areas overlap those in the urbanized area) the subject will be dealt with more fully in the Options for the Future report.

APPENDICES:

- | | |
|--------------|---|
| Appendix "A" | - Education |
| Appendix "B" | - Residential Development in the Rural Area (Land Severances) |
| Appendix "C" | - Mineral Resources |
| Appendix "D" | - Forested Areas and Woodlots |
| Appendix "E" | - Hazard Land Areas |
| Appendix "F" | - Environmentally Sensitive Areas |
| Appendix "G" | - Transportation |
| Appendix "H" | - Calculation of the Projected Rural Population |
| Appendix "I" | - Mobile Home Parks |
| Appendix "J" | - Health and Social Services |

Appendix A.1 WENTWORTH COUNTY BOARD OF EDUCATION

School Directory for September, 1976

FLAMBOROUGH

Boundary Area I

1. Flamborough Centre (Gr. 7-8)
2. Mary Hopkins (Gr. K-6)
3. Guy B. Brown (Gr. K-6)
4. Victoria (Gr. 4-6)
5. Balaclava (Gr. K-3)
- A. Waterdown District High (Gr. 9-13)

Boundary Area II

6. Spencer Valley (Gr. 6, 7, 8)
7. West Flamborough (Gr. 1-3)
8. Greensville (Gr. K-6)
9. Bowman (Gr. K-5)
10. Millgrove (Gr. 2-6)
11. Brockview (Gr. K-1)
12. Strabane (Gr. 1, 2, 3)
13. Beechgrove (Gr. K, 4, 5)

Boundary Area III

14. Dr. J. Seaton (Gr. 6-8)
15. Sheffield (Gr. K, 3, 4, 5)
16. Lynden (Gr. 1-5)
17. Beverly Central (Gr. K-5)
18. Valens (Gr. 1-2)

ANCASTER

Boundary Area IV

19. Ancaster Senior Public (Gr. 7-8)
20. Maple Lane (Gr. K-6)
21. Grange (Gr. K-6)
22. Fessenden (Gr. K-6)
23. C. H. Bray (Gr. 1-6)
24. Memorial (Gr. 1-6)
25. Rousseau (Gr. K-6)
26. Queen's Ranger (Gr. K-6)
27. Jerseyville (Gr. K-5)
- B. Ancaster High and Vocational (Gr. 9-13)

GLANBROOK

Boundary Area V

28. Mt. Hope (Gr. K-8)
29. Bellstone (Gr. K-6)
30. Pioneer Memorial (Gr. K-6)

Boundary Area VI

31. Bellmore (Gr. K-8)
32. Parkwood (Gr. K-6)

(Cont'd)

STONEY CREEK

Boundary Area VII

- 33. Green Acres (Gr K-8)
- 34. R. L. Hyslop (Gr. K-6)

Boundary Area VIII

- 35. Collegiate (Gr. K-8)
- C. Saltfleet High (Gr. 9-13)

Boundary Area IX

- 36. Mountainview (Gr. K-8)

Boundary Area X

- 37. Eastdale (Gr. K-8)

Boundary Area XI

- 38. Memorial (Gr. K-8)

Boundary Area XII

- 39. Winona (Gr. K-8)
- 40. Glover Rd. (Gr. K-6)
- D. Orchard Park Secondary (Gr. 9-13)
- E. Winona High (Gr. 9-13)

Boundary Area XIII

- 41. Mount Albion (Gr. K-8)

Boundary Area XIV

- 42. Tapleytown (Gr. K-8)

DUNDAS

Boundary Area XV

- 43. Central (Gr. K-8)
- 44. Central Park (Gr. K-6)
- 45. Yorkview (Gr. K-6)
- 46. Valley (Gr. 2-6)
- F. Dundas District High (Gr. 9-13)
- G. Parkside High (Gr. 9-13)

Boundary Area XVI

- 47. Dundana (Gr. K-8)
- 48. Pleasant Valley (Gr. K-6)
- 49. University Gardens (Gr. K-6)
- H. Highland Secondary (Gr. 9-13)

Appendix A.2

Public Elementary and Secondary Schools

Serving Rural Settlements, 1975-76

Rural Settlement	Elementary (Grs. K-6)	Senior Elementary (Grs. 7-8)	Secondary (Grs. 9-13)
<u>ANCASTER</u>			
Alborton	Maple Lane-Gr. K-6	Ancaster Sr. Public	Ancaster High
Carluke	Grange-Gr. K-6	Ancaster Sr. Public	Ancaster High
Copetown	Queen's Ranger- Gr. K-6	Ancaster Sr. Public	Ancaster High or Dundas Secondary Schools
Jerseyville	Jerseyville- Gr. K-5 Queen's Ranger- Gr. 6	Ancaster Sr. Public	Ancaster High
Southcote	Grange- Gr. K-6	Ancaster Sr. Public	Ancaster High
<u>FLAMBOROUGH</u>			
Brockview	Brockview - Gr. K-1 Millgrove- Gr. 2-6	Spencer Valley	Dundas Secondary Schools or Waterdown High (depending on options)
Carlisle	Balaclava- Gr. K-3 Victoria- Gr. 4-6	Flamborough Centre	Waterdown High
Flamborough Centre	Guy B. Brown- Gr. K-6	Flamborough Centre	Waterdown High Highland Secondary (Dundas)
Freelton	Strabane- Gr. 1,2,3 Beechgrove- Gr. K, 4-5 Spencer Valley- Gr. 6	Spencer Valley	Dundas Secondary Schools or Waterdown High (depending on options)
Harper's Corner	Balaclava- Gr. K-3 Victoria- Gr. 4-6 (depending on grade enrolments)	Flamborough Centre	Waterdown High
Kirkwall	Valens- Gr. 1-2 Sheffield- Gr. K, 3, 4, 5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools (depending on options) or Waterloo County Secondary Schools, if closer
Lynden	Jerseyville- Gr. K-5 Lynden- Gr. 1-4 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools or Ancaster High
Millgrove	Bowman- Gr. K-1 Millgrove- Gr. 2-6	Spencer Valley	Dundas Secondary Schools or Waterdown High
Mountsburg	Balaclava- Gr. K-3 Victoria- Gr. 4-6 (depends on grade enrolment)	Flamborough Centre	Waterdown High
Orkney	Beverly Central Gr. K-5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools

(Cont'd)

Appendix A.2 (Cont'd)

Rural Settlement	Elementary (Grs. K-6)	Senior Elementary (Grs. 7-8)	Secondary (Grs. 9-13)
<u>FLAMBOROUGH</u> - Cont'd)			
Rockton	Beverly Central- Gr. K-5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools or Waterloo County Secondary Schools, if closer
Sheffield	Valens- Gr. 1-2 Sheffield- Gr. K,3-5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools or Waterloo County Secondary Schools, if closer
Strabane	Strabane- Gr. 1-3 Beechgrove- Gr. K,4,5 Spencer Valley- Gr. 6	Spencer Valley	Dundas Secondary Schools
Troy	Valens- Gr. 1-2 Sheffield- Gr. K, 3,4,5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools
Westover	Beverly Central- Gr. K-5 Dr. J. Seaton- Gr. 6	Dr. J. Seaton	Dundas Secondary Schools
Greensville	Greensville- Gr. K-6	Spencer Valley	Dundas Secondary Schools
<u>GLANBROOK</u>			
Dickenson Road	Pioneer Memorial- Gr. K-6	Mt. Hope	Orchard Park Secondary School - depending on options or Ancaster High, if near bus routes
Woodburn	Parkwood- Gr. K-6	Bellmoore	Orchard Park Secondary School - depending on options
Binbrook	Bellmoore- Gr. K-8		Orchard Park Secondary School - depending on options
Mt. Hope	Mt. Hope- Gr. K-8		Orchard Park - depending on options or Ancaster High, if near bus route
<u>STONEY CREEK</u>			
Tapleytown	Tapleytown- Gr. K-8		Winona Secondary
Vinemount	Tapleytown- Gr. K-8		Winona Secondary

Appendix A.3

WENTWORTH COUNTY BOARD OF EDUCATION

SCHOOL ENROLMENTS AND CAPACITIES BY MUNICIPALITY 1975-76

Municipality	ELEMENTARY				SECONDARY			
	Enrol- ment ^a	Capacity	%	Surplus	Enrol- ment ^a	Capacity	%	Surplus
Flamborough	3,620	4,666	77.6	1,046	608	780	77.9	172
Dundas	2,362	3,270	72.2	908	2,382	2,830	84.2	448
Ancaster	2,128	3,490	60.9	1,362	1,510	1,845	82.1	335
Glanbrook ^b	1,505	1,966	76.5	461	-	-	-	-
Stoney Creek ^c	3,329	5,125	64.9	1,796	2,499	3,420	73.1	921
TOTAL	12,944	18,517	69.9	5,573	6,999	8,875	78.9	1,876

^aApril 1976 figures are used

^bTwo elementary schools were closed and figures excluded

^cOne elementary school was closed and figures excluded

Source: Wentworth County Board of Education

Senior Elementary Boundary	Rural Settlements Served	Senior Elementary School *	Enrol- ments April /76	Enrol- ment Capacity	Surplus Pupil Places	Enrolment /Capacity (Percent)
F I	Mountsberg Carlisle Harper's Corners Flamboro Centre	Flamboro Centre Gr. 7-8	338	366	28	92.3
L						
A						
M II						
B						
O						
R						
O						
U III						
G						
H						
TOTALS			1054	1350	296	78.0
I	Freelton Strabane Brockview Millgrove Greens- ville	Spencer Valley Gr. 6,7,8	388	405	17	95.8
IIA						
IIB						
IIC						
TOTALS			819	1,300	481	62.2
IIIA	Kirkwall Sheffield Troy	Dr. John Seaton Gr. 6,7,8	400	440	40	90.9
IIIB	Rockton Orkney Westover Lynden					
IIIC						
TOTALS			621	805	184	77.1

*For Boundary Areas and School Locations, refer to Figure 8.

****N/A means Not Applicable**

Source for Tables 1A, 1B, and 1C: The Wentworth County Board of Education

APPENDIX A.4.2 PUBLIC ELEMENTARY SCHOOLS SERVING THE RURAL AREAS - ENROLMENTS AND CAPACITIES, 1975-76

Senior Elementary Boundary	Rural Settlements Served	Senior Elementary School	Enrol- ments April /76	Enrol- ment Capacity	Surplus Pupil Places	Enrolment / Capacity (Percent)	Enrolment April /76	Junior Elementary School	Rural Settlements Served	Junior Elementary Boundary	Enrolment / Capacity (Percent)	Surplus Pupil Places	Enrolment / Capacity (Percent)
A	IV	Copetown Jerseyville	595	530	145	80.4	184	Queen's Ranger	Copetown	IVA	80.4	171	51.8
N		Alberton Carluke Southcote		+210 740			184	Gr. K-6 Memorial		IVB		251	42.2
C		Gr. 7-8 + 6 class- rooms from Fessenden					166	Gr. 1-6 C.H. Bray				154	51.8
A							294	Gr. 1-6 Rousseau				171	63.2
S							268	Gr. K-6 Fessenden				162	62.5
T							N/A**	Gr. K-6 Grange				N/A	N/A
E							122	Gr. K-6 Jerseyville	Jersey- ville	IVC		18	87.1
R							N/A	Gr. K-5 Queen's Ranger				N/A	N/A
							143	Gr. K-6 Maple Lane	Alberton	IVD		142	50.1
							172	Gr. K-6 Grange	Carluke Southcote }			148	53.7
							1,533	Gr. K-6		TOTALS	2,750	1,217	55.7
Totals for Ancaster (Junior and Senior)													
			2,128	3,490	1,362	60.9							
V		Dickenson Road	N/A**	N/A	N/A	N/A	215	Pioneer Memorial	Dickenson Road	VA		70	75.4
G		Mount Hope					429	Gr. K-6 Mount Hope	Mount Hope	VB		136	75.9
L		Gr. K-8					152	Gr. K-8 Bellstone		VC		133	53.3
N							796	Gr. K-6		TOTALS		339	70.1
B							291	Parkwood Gr. K-6	Woodburn	VIA	N/A	64	81.9
R							418	Bellmore Gr. K-8	Binbrook	VIB		58	87.8
O							709			TOTALS	831	122	85.3
K													
Totals for Glanbrook (Junior and Senior)													
			1,505	1,966	461	76.5							

*For Boundary Areas and School Locations, refer to Figure 8.

**The Symbol N/A means Not Applicable

APPENDIX A.4.3 PUBLIC ELEMENTARY SCHOOLS SERVING THE RURAL AREAS- ENROLMENTS AND CAPACITIES, 1975-76

Senior Elementary Boundary	Rural Settlements Served	Senior Elementary School*	Enrol-ments April/76	Enrol-ment Capacity	Surplus Pupil Places	Enrolment /Capacity (Percent)
VII	-	Green Acres Gr. K-8	N/A**	N/A	N/A	N/A
S	-	Green Acres Gr. K-8	532	705	173	75.4
T	-	R.L. Hyslop Gr. K-6	310	460	150	67.3
O VIII	-	Collegiate Gr. K-8	398	565	167	70.4
N IX	-	Mountview Gr. K-8	247	425	178	58.1
E	-	Eastdale Gr. K-8	312	390	78	80.0
Y X	-	Memorial Gr. K-8	372	600	228	62.0
C XI	-	Winona Gr. K-8	N/A	N/A	N/A	N/A
R XII	-	Mount Albion Gr. K-8	326	495	169	65.8
E XIII	-	Valley Gr. 2-6	52	175	123	29.7
K	-	Yorkview Gr. K-6	309	390	81	79.2
XIV	Vinemount Tapletown Gr. K-8	339	600	261	56.5	
Totals for Stoney Creek (Junior and Senior)						
			3,329	5,125	1,796	64.9
D XV	-	Central Gr. K-8	N/A**	N/A	N/A	N/A
U	-	Dundana Gr. K-8	N/A	N/A	N/A	N/A
N	-	University Gardens Gr. K-6	167	250	83	66.8
D XVI	-	Pleasant Valley Gr. K-6	464	530	66	87.5
A	-	Dundana Gr. K-8	392	530	138	73.9
S	-	University Gardens Gr. K-6	167	250	83	66.8
Totals for Dundas (Junior and Senior)						
			2,362	3,270	908	72.2

*For School Boundary Areas and Locations, refer to Figure 8.

Appendix A.5 THE WENTWORTH COUNTY BOARD OF EDUCATION - SECONDARY SCHOOLS - BOUNDARIES, ENROLMENTS AND CAPACITIES, 1975-76

Secondary School	Senior Elementary School Boundaries Served (Refer to Map No. 1)	Possible Settlements Served	Enrolment 1975-76 (April '76)	Enrol. Capacity Ratings by Ministry of Education	Surplus Pupil Places	Enrolment Capacity (%)
Watertown High	I Part of II	Mountsbury (Carlisle) Hanger's Corner Flamborough Ctr. Freelton Brookview Millgrove	608	780	172	77.9
Dundas Secondary Schools	II, III IV, XVI	Freelton Strabane Brookview Millgrove Greenville Kirkwall ^a Sheffield ^a Troy Rockton ^a Orkney Westover Lynden ^b	482 958 942 2,382	610 1,160 1,060 2,830	128 202 118 448	79.0 82.6 88.9 84.2
1. Dundas District						
2. Highland						
3. Parkside						
Ancaster High	IV	Coxetown Jerseyville Alborton Carlisle Southcoote	1,510	1,845	335	81.8
Orchard Park or Saltfleet Secondary	V, VI, VII VIII, IX, X, XI, XIII	Dickenson Rd. ^c Mount Hope ^c Woodburn Binbrook	1,238 659 1,897	1,510 1,100 2,610	272 441 713	82.0 59.9 72.7
Winona Secondary	XII, XIV	Vineau Tapperton	602	810	208	74.3
TOTAL			6,999	8,875	1,876	78.9

- Secondary school students from Kirkwall, Sheffield and Rockton may attend Waterloo County Secondary schools if they live closer than the Dundas schools.
- Secondary school students from Lynden may attend Ancaster High.
- Secondary school students from Dickenson Rd. and Mount Hope may attend Ancaster High School if they are closer to the bus route.

Source: The Wentworth County Board of Education

Appendix A.6 HAMILTON-WENTWORTH SEPARATE SCHOOL BOARD:

ELEMENTARY SCHOOL BOUNDARIES, ENROLMENTS AND CAPACITIES, 1975-76
(excluding Hamilton)

	Enrolments 1975-76	Capacity 1976	Enrolment/ Capacity (Percent)	Surplus Pupil Places
<u>FLAMBOROUGH</u>				
Boundary Area I*				
1. St. Thomas Gr. K-8	223	285	78.2	62
<u>DUNDAS</u>				
Boundary Area II				
2. St. Augustine Gr. K-8	527	541	97.4	14
3. St. Bernadette Gr. 1-8	107	140	76.4	33
	634	681	93.1	47
<u>ANCASTER</u>				
Boundary Area III				
4. Father Loftus Gr. 6-8	151	175	86.3	24
5. St. Anne Gr. K-5	218	320	68.1	102
	369	495	74.5	126
<u>GLANBROOK/HAMILTON</u>				
Boundary Area IV				
6. Corpus Christi Gr. K-8	244	285	85.6	41
<u>STONEY CREEK</u>				
Boundary Area V				
7. Our Lady of the Assumption Gr. K-8	341	406	84.0	65
Boundary Area VI				
8. St. James the Apostle Gr. K-8	101	481	21.0	380
Boundary Area VII				
9. St. Martin of Tours Gr. K-8	390	425	91.8	35
Boundary Area VIII				
10. St. Francis Xavier Gr. K-8	643	880	73.1	237
Boundary Area IX				
11. Immaculate Heart of Mary Gr. K-8	257	425	60.5	168
	1,732	2,617	66.2	885
TOTAL SCHOOLS	3,202	4,363	73.4	885

* For school locations and boundaries refer to Figure 10.

Appendix A.7

Separate Schools Serving Rural Settlements, 1975-76

<u>Settlement</u>	<u>Elementary Grades K-8</u>	<u>Elementary Grades 9-10</u>
<u>Ancaster</u>		
Alborton	St. Anne - Gr. K-5 Father Loftus - Gr. 6-8	St. Thomas Moore in Hamilton (West Mountain)
Carluke		
Copetown		
Jerseyville		
Southcote		
<u>Flamborough^a</u>		
Freelton	St. Thomas - Gr. K-8	St. Mary's in West Hamilton
Mountsberg		
Strabane		
Harper's Corner		
Brockview		
Millgrove		
Flamborough Ctr. (Carlisle) (Waterdown)		
Greensville	St. Augustine - Gr. K-8 in Dundas St. Bernadette - Gr. 1-8 in Dundas	St. Mary's in West Hamilton
Orkney		
Lynden		
<u>Glanbrook</u>		
Dickenson Rd. Mount Hope ^b	Corpus Christi - Gr. K-8 in Hamilton (West Mountain)	St. Thomas More in Hamilton (West Mountain)
Woodburn		
Binbrook	Our Lady of the Assumption Gr. K-8 in Stoney Creek	Cardinal Newman in Stoney Creek
<u>Stoney Creek</u>		
Tapleytown Vinemount	Our Lady of the Assumption Gr. K-8	Cardinal Newman in Stoney Creek

a. Separate School students west of Brock Road and north of Highway No. 5 may attend the nearest separate school in neighbouring municipalities outside of Hamilton-Wentworth.

b. Separate School students south of Mount Hope go to separate schools in Haldimand/Norfolk.

SOURCE: The Hamilton-Wentworth Separate School Board

Appendix A.8

EFFECT OF YEAR 2001 PROJECTED SCHOOL ENROLMENTS

ON EXISTING SCHOOLS, FOR RURAL AREAS

	<u>ELEMENTARY SCHOOLS</u>	<u>SECONDARY SCHOOLS</u>
<u>ANCASTER</u>		
Rural areas including:		
Alberton Carluke Copetown Jerseyville	If urbanized population* increases to 29,000, projected school enrolments will exceed existing school capacities	If urbanized population increases to 19,000 projected school enrolments will exceed existing school capacities
<u>FLAMBOROUGH</u>		
Rural areas including:		
Mountsberg Carlisle Harper's Corner Flamborough Centre Freelton Strabane Brockview Millgrove Kirkwall Sheffield Troy Rockton Orkney Westover Lynden	If urbanized population increases to 76,000, projected school enrolments will exceed existing school capacities Projected school enrolments can be accommodated in existing schools	If total (urbanized and rural) population increases to 26,100, projected school enrolments will exceed existing school capacities
<u>GLANBROOK</u>		
Rural areas including:		
Dickenson Rd. Mount Hope Woodburn Binbrook	If total (urbanized and rural) population increases to 14,600, projected school enrolments will exceed existing school capacities	
<u>STONEY CREEK</u> - Above Mountain including Saltfleet Community		
Rural areas including:		
Tapleytown Vinemount	If rural population increases to 4,000, projected school enrolments will be equal to existing school capacities	If total (urbanized and rural) population increases to 16,600, projected school enrolments will exceed existing school capacities

* In all cases, population figures indicated in this table refer to population projections for the alternatives discussed in the Options For the Future Report.

APPENDIX "B"

Land Severances in the Rural Area

Severances of land for agricultural and residential purpose shown in this Appendix indicate the number and municipality where severances have occurred in the Rural Area between 1971 and 1975.

SOURCE: Development Division
Planning and Development Department
Regional Municipality of Hamilton-Wentworth

CRITERIA USED TO DETERMINE THE TOTAL NUMBER OF RESIDENTIAL
SEVERANCES APPROVED WITHIN THE RURAL (UNSERVICED) AREAS

1. The land use of the lot conveyed is indicated for purely residential (single family) purposes.
2. The residential severance as shown are located only within the rural (unserved) area of the Region.
3. An existing dwelling on a lot to be conveyed is shown as a "Residential Severance" - since the vacant parcel of land to be retained establishes another buildable lot.
4. Residential Severance's located within Registered Plan's of Subdivision are not included in the calculations since approved Registered Plans are either located within, or very close to full urban services.
5. The residential severances previously approved within the one small area of the former township of Beverly have not been shown since this area is no longer within the boundaries of the Region.
6. Lands to be added to existing residential lots are not shown. Only newly created lots for residential purposes are calculated.
7. The result of the decisions of the O.M.B. with respect to upholding or dismissing the decision of the Committee's of Adjustment or Land Division Committee's represent a negligible amount of the total number of new residential lots created, and therefore have not been shown.

The last two years (1974-1975) O.M.B. has basically upheld the decision of L.D.C. for refusal of most of the applications.

RESIDENTIAL SEVERANCES IN RURAL AREAS

1971 - 75

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Ancaster	19	10	14	10	12
Flamborough*					
Beverly	63	41	56	N/A	N/A
East Flamborough	42	38	51	N/A	N/A
West Flamborough	29	22	57	N/A	N/A
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	134	101	164	51	37
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Glanbrook*					
Binbrook	38	41	57	N/A	N/A
Glanford	12	22	24	N/A	N/A
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	50	63	81	17	13
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Stoney Creek*					
Saltfleet	13	13	20	N/A	N/A
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	13	13	20	3	4
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Regional Total	<u>216</u>	<u>187</u>	<u>279</u>	<u>81</u>	<u>66</u>

Note: *Municipal boundary changes in 1974, due to the formation of the Region, are reflected by symbol N/A.

APPENDIX "C"

Mineral Resource

Dolomite and Limestone depositions and Gravel and Sand depositions are shown on Figure 12. The Region's total estimated stone reserves are 26,930 million tons and total estimated Gravel and Sand reserves are 57,5 million tons. This Appendix indicates the calculation method and criteria used to determine the Regional Mineral Aggregate Requirements.

APPENDIX "C"

Mineral Resources

The Mineral Aggregate Study, Central Ontario Planning Region, prepared by Proctor & Redfern for the Ontario Ministry of Natural Resources, indicated that in Ontario the following capita/year demands will occur.

	Crushed Stone	Gravel & Sand	Total
1986	6.2 tons	16.3 tons	22.5 tons
2001	6.8 tons	17.9 tons	24.9 tons

Based on these figures the Hamilton-Wentworth Planning Area would require by the years 1986 and 2001 the following:

Year	Crushed Stone	Gravel & Sand	Total
*1986	26,970,000 t	70,905,000 t	97,875,000 t
2001	48,552,000 t	127,806,000 t	176,358,000 t
Total	75,522,000 t	198,711,000 t	274,233,000 t

*Note: Aver. pop. = 435,000 pers. until 1986
 = 476,000 pers. until 2001

This indicates that the Region, by utilizing all Mineral aggregate resources, will have insufficient Gravel and Sand resources by 1986 but will have sufficient crushed stone resources even past the year 2001. (See section 4.4.1).

Calculation of area required for crushed stone

$$\begin{aligned}
 75,522,000 \text{ tons} \div 2.32 \text{ t/cu. yard} &= 32,552,586 \text{ cu. yard} \\
 32,552,586 \text{ cu. yard} \times 27 &= 878,919,822 \text{ cu./ft.} \\
 878,919,822 \div 40 \text{ ft.}^{**} &= 21,972,995 \text{ sq. ft.} \\
 21,972,995 \text{ sq. ft.} \div 43,560 &= \underline{\underline{505 \text{ Ac.}}}
 \end{aligned}$$

**Note: Aver. depth of usable limestone deposits.

APPENDIX "D"

Forested Areas and Woodlots

This Appendix indicates the criteria by which valuable Forested Areas and Woodlots will be selected. Some wooded areas will be subject to the criteria for environmentally sensitive areas.

Appendix "D"

Forested Areas and Woodlots Criteria

Prime woodlots covered by forest management agreements, are defined as:

- a) not less than 400 trees of any size
- b) 300 trees per acre over 2" (inches) D.B.H.
- c) 200 trees per acre over 5" (inches) D.B.H.
- d) 100 trees per acre over 8" (inches) D.B.H.

D.B.H. = Diameter of Breast Height,

tree means any of the following species (s) or species with a genera (g)

Cedar (s)	Black Gum (s)
Pine (g)	Sassafras (s)
Spruce (g) except Colorado Spruce	Poplar (g)
Hemlock (s)	Basswood (s)
Balsam Fir (s)	Tulip (s)
Birch (g)	Beach Cherry (s)
Oak (g)	Tamarrack (s)
Ash (g)	Walnut (s)
Elm (g)	Sycamore (s)
Butternut (s)	Cocust (s)
Maple (g)	
Beech (s)	

APPENDIX "E"

Hazard Land Areas

Hazard Land Areas are shown on Figure 15 indicating areas which are affected by physical hazardous conditions. The areas shown are general and require detailed evaluation for any development proposal affecting the shown Hazard Land Areas.

APPENDIX "E"

Hazard Lands - Definition

Hazard Lands are defined as all lands having inherent physical hazards such as poor drainage, organic soils, flood susceptibility, erosion susceptibility, steep slopes and other physical limitations to development.

Two levels of Hazard Land are recognized: High Hazard and Low Hazard.

In the High Hazard category, no development is permitted due to the risk of loss of life or property, the high cost of remedial measures to overcome the hazard(s), and the likelihood that all taxpayers have to bear the cost of remedial measures. In the Low Hazard category, certain types of development may be permitted under specific conditions due to lower risks and costs involved.

Identification Criteria

The following factors are used by the Ministry of Natural Resources to define Hazard Lands:

- a) Flood plains
- b) Soil conditions
- c) Erosion and soil stability, and
- d) Other factors

Outlined in the following are the criteria utilized to identify these Hazard Land factors in any given area:

1. Flood Plains

- a) For watersheds 320 acres in area and larger, computed for Regional storm as defined by the Conservation Authority, or 1 in 100-yr. storm, whichever is greater -
High Hazard
- no development permitted

- b) For watersheds less than 320 acres in area
Low Hazard - flood line computation not necessary
- selective controls required to permit development.

2. Susceptibility to Erosion

- a) Lake shores with banks that are susceptible to erosion because of wave action or wind action
- b) Banks along watercourses which are actively being eroded or which are subject to erosion during flooding periods. The relationship to flood plains is important in this instance.
- c) Erosion associated with certain soil types, e.g., Leda clays

3. Instability and Poorly Drained Soils

Unstable land is prone to shifting, slumping and sinking, and is usually a function of soil type and slope. The following circumstances are generally hazardous:

- a) Leda clays
- b) Talus slope
- c) Quick sand
- d) Certain organic soil conditions

4. Other Conditions

Certain man-made or natural features may also produce hazardous conditions. These features are:

- a) Uncapped abandoned gas and oil wells
- b) Unstable abandoned mine shafts
- c) Karst topography

APPENDIX "E"

Hazard Land Areas Criteria

Hazard Lands be evaluated on the basis of the following:

1. Bedrock:
 - a) bedrock outcrop
 - b) very shallow depth of overburden
2. Soils:
 - a) unstable silts and clays
 - b) alluvial soils
 - c) marshy and swampy organic soils
3. Slopes:
 - a) areas with slopes more than 14% (1:4 ratio)
4. Surface Drainage:
 - a) areas with poor drainage
 - b) areas with high water table
 - c) swampy and marshy areas
 - d) streams and watercourses
 - e) drainage channels
5. Susceptibility to Erosion:
 - a) slopes in excess of 12% with gravelly sandy to fine sandy loams having little or no surface cover
 - b) slopes in excess of 10% with gravelly sand or silt loams without appropriate surface cover
 - c) areas with fine texture soils

A development free zone of 60' from the crest of watercourse or creek areas, or 100' from the centre line of watercourse is to be maintained.

APPENDIX "F"

Environmentally Sensitive Areas

Environmentally Sensitive Areas are shown on Figure 13 which were selected on the basis of the following criteria.

APPENDIX "F"

Environmentally Sensitive Areas

Selection Criteria

Sensitive areas are those natural landscapes including those lands and/or waters of inherent biological sensitivity, such as areas containing aquifer recharges, headwaters, unique plants, wildlife or landforms, breeding or overwintering habitats, vital ecological functions, rare or endangered species, or other combinations of habitat and landform which could be essential for scientific research, conservation or education. These sensitive areas may, or may not, have been significantly affected by current or past human activity, and they may, or may not, require intensive management in order to restore, maintain or improve certain of their natural values, and they are essentially remnant areas which have not been converted to intensive urban or agricultural uses.

Criteria for selecting these highly sensitive areas include, but are not necessarily restricted to, any one or combination of the following;

1. The area represents a distinctive and unusual landform within the municipality, Ontario or Canada.
2. The area serves a vital ecological function, such as maintaining the hydrologic balance over a widespread area, i.e., it serves as a water storage or recharge area.
3. The plant and/or animal communities of the area are identified as unusual or of high quality, locally within the municipality, Ontario or Canada.
4. The area is an unusual habitat with limited representation in the municipality, Ontario or Canada, or a small remnant of particular habitats which have virtually disappeared within the municipality.
5. The area has an unusually high diversity of biological communities and associated plants and animals due to a variety of geomorphological features, soils, water, sunlight and associated vegetation and microclimatic effects.
6. The area provides habitat for rare or endangered species that are endangered Regionally, Provincially or Nationally.
7. The area is large and undisturbed, potentially affording a sheltered habitat for species which are intolerant to human disturbance.

8. The location of the area, combined with its natural features, make it particularly suitable for scientific research and conservation education purposes.
9. The combination of landforms and habitats are identified as having high aesthetic value in the context of the surrounding landscape and any alteration would significantly lower its amenity value.

APPENDIX "G"

Transportation

This Appendix indicates the Rural Bus Service routes and their frequencies. The land use guidelines for areas affected by aircraft noise in the vicinity of an airport are also provided.

		<u>RURAL BUS SERVICE</u> (1)	
Route Description	Operator	Frequency of Service (one-way trips per day)	
A. Hamilton-Flamboro-Guelph	C.C.L. Ltd.	Mon.-Thurs.	12
		Friday	17
		Saturday	14
		Sunday	8
B. Hamilton-Waterdown	C.C.L. Ltd.	Mon.-Fri.	10
		Saturday	6
		Sunday	0
C. Hamilton-Carlisle (2)	C C.L. Ltd.	Mon -Fri.	4
		Saturday	2
		Sunday	0
D. Hamilton-Lynden	C.C L. Ltd	Mon.-Thurs	0
		Friday	4
		Saturday, Sunday	0
E. Hamilton-Ancaster-Brantford	C.C.L. Ltd	Mon -Thurs.	16
		Friday	20
		Saturday	19
		Sunday	8
F. Hamilton-Flamboro-Kitchener	C C.L. Ltd.	Mon.-Thurs.	18
		Friday	19
		Saturday	16
		Sunday	10
G. Hamilton-Mount Hope-Caledonia (3)	C.C.L. Ltd.	Mon.-Thurs.	16
		Fri. Sat.	18
		Sunday	11
H. Hamilton-Binbrook	C.C.L. Ltd.	Mon.-Fri.	2
		Saturday, Sunday	0
I. Hamilton-Stoney Creek-Winona (4)	C.C.L. Ltd.	Mon.-Fri.	16
		Saturday	4
		Sunday	0
J. Hamilton-Elfrida-Welland	C.C.L. Ltd.	Mon.-Thurs.	0
		Fri.	2
		Saturday, Sunday	0
K. Binbrook-Stoney Creek (Eastgate Shopping Centre)	Wills Motors Ltd.	Mon.-Fri	4
		Saturday	12
		Sunday	0

NOTES: (1) Effective June 20, 1976
 (2) All trips stop at Waterdown also
 (3) Some trips continue to Dunville, Port Dover, Tilsonburg
 (4) Includes only those trips which pick up and/or discharge passengers between Fruitland Road and Winona

TABLE G.2

LAND USE - AIRCRAFT NOISE ASSESSMENT GUIDELINES

Noise Exposure Forecast Values	>40	40-35	35-30	<30
Response Areas	1	2	3	4

LAND USE

Residential

Detached and Semi-Detached	NO	NO	B	A
Town Houses, Garden Homes	NO	NO	B	A
Apartments	NO	NO	B	A

Public

Schools	NO	NO	D	C
Churches	NO	NO	D	C
Hospitals	NO	NO	D	C
Nursing Homes	NO	NO	D	C
Auditoriums	NO	NO	D	C
Libraries	NO	NO	D	C
Community Centres	NO	NO	D	C
Cemeteries	N	N	N	N

Municipal Utilities

Electric Generating Plants	YES	YES	YES	YES
Gas and Oil Storage	YES	YES	YES	YES
Garbage Disposal	YES	YES	YES	YES
Sewage Treatment	YES	YES	YES	YES
Water Treatment	YES	YES	YES	YES
Water Storage	YES	YES	YES	YES

TABLE G.2 (cont'd)

LAND USE - AIRCRAFT NOISE ASSESSMENT GUIDELINES

Noise Exposure Forecast Values	> 40	40-35	35-30	< 30
Response Areas	1	2	3	4
<u>Recreational - Outdoor</u>				
Athletic Fields	NO	J	K	YES
Stadiums	NO	NO	K	YES
Theatres - Outdoor	NO	NO	NO	H
Racetracks - Horses	NO	K	K	YES
Racetracks - Autos	YES	YES	YES	YES
Fairgrounds	K	K	YES	YES
Golf Courses	YES	YES	YES	YES
Beaches and Pools	YES	YES	YES	YES
Tennis Courts	NO	K	YES	YES
Playgrounds	K	K	YES	YES
Marinas	YES	YES	YES	YES
Camping Grounds	NO	NO	NO	H
Parks and Picnic Areas	NO	K	YES	YES
<u>Commercial</u>				
Offices	F	E	D	YES
Retail Sales	F	D	YES	YES
Restaurants	F	D	D	YES
Indoor Theatres	NO	G	D	YES
Hotels & Motels	NO	F	G	YES
Parking Lots	YES	YES	YES	YES
Gasoline Stations	YES	YES	YES	YES

TABLE G.2 (cont'd)

LAND USE - AIRCRAFT NOISE ASSESSMENT GUIDELINES

Noise Exposure Forecast Values	> 40	40-35	35-30	< 30
Response Areas	1	2	3	4
Warehouses	YES	YES	YES	YES
Outdoor Sales	E	K	YES	YES
<u>Industrial</u>				
Factories	I	I	YES	YES
Machine Shops	I	I	YES	YES
Rail Yards	YES	YES	YES	YES
Ship Yards	YES	YES	YES	YES
Cement Plants	I	I	YES	YES
Quarries	YES	YES	YES	YES
Refineries	I	I	YES	YES
Laboratories	NO	D	YES	YES
Lumber Yards	YES	YES	YES	YES
Saw Mills	I	I	YES	YES
<u>Agricultural</u>				
Crop Farms	YES	YES	YES	YES
Market Gardens	YES	YES	YES	YES
Plant Nurseries	YES	YES	YES	YES
Tree Farms	YES	YES	YES	YES
Livestock Pastures	M	YES	YES	YES
Poultry Farms	L	L	YES	YES
Stockyards	M	YES	YES	YES

TABLE G.2 (Cont'd)

LAND USE - AIRCRAFT NOISE ASSESSMENT GUIDELINES

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Dairy Farms	M	YES	YES	YES
Feed Lots	M	YES	YES	YES
Fur Farms	K	K	K	K

SOURCE: Canadian Air Transportation Administration, Ministry of Transport, 1972.

NOTES:

1. Response Areas:
 - 1 = Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.
 - 2 = Individual complaints may be vigorous. Possible group action and appeals to authorities.
 - 3 = Sporadic to repeated individual complaints. Group action is possible.
 - 4 = Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

2. Table Entries:

NO	- Indicates that new construction or development of this nature should not be undertaken
A-N	- This particular land use may be acceptable in accordance with the appropriate note and subject to the limitations indicated therein (see Table T3 for explaining)
YES	- The indicated land use is not considered to be adversely affected by aircraft noise and no special noise insulation should be required for new construction or development of this nature

TABLE 0.3

EXPLANATORY NOTES

- A. A marginal **zone** exists near the 30 NEF level where aircraft noise may begin to annoy some residents. It is recommended that developers be made aware of this fact and that they inform prospective tenants or purchases of residential units. In addition, it is suggested that development should not proceed until the responsible authority is satisfied that noise insulation features, if required, have been considered in the building design.
- B. The developer should be required to inform prospective tenants or purchasers of residential units that aircraft noise may interfere with certain activities. Construction should not be permitted to proceed until the responsible authority is satisfied that appropriate noise insulation features have been considered in the building design.
- C. These facilities should not be located close to the 30 NEF contour unless the restrictions outlined in Note D are applied.
- D. These uses should not be approved unless a detailed analysis is conducted and the required noise insulation features are considered by the architectural consultant responsible for building design.
- E. When associated with a permitted land use, an office may be located in this zone provided that all relevant factors are considered and a detailed analysis is conducted to establish the noise reduction features required to provide an indoor environment suited to the specific office function.

- P. It is recommended that this specific land use should be permitted only if related directly to aviation-oriented activities or services. Conventional construction will generally be inadequate and special noise insulation features should be included in the building design.
- G. Generally, these facilities should not be permitted in this zone. However, where it can be demonstrated that such a land use is highly desirable in a specific instance, construction may be permitted to proceed provided that a detailed analysis is conducted and the required noise insulation features are included in the building design.
- II. Facilities of this nature should not be located close to the NEF 30 contour unless a detailed noise analysis has been conducted.
- I. Many of these uses would be acceptable in all NEF zones. However, consideration should be given to internally generated noise levels, and acceptable noise levels in the working area.
- J. Undesirable if there is spectator involvement.
- K. It is recommended that serious consideration be given to an analysis of peak noise levels and the effects of these levels on the specific land use under consideration.
- L. The construction of covered enclosure should be undertaken if this use is to be newly introduced to the noise environment.
(See Note M)
- M. Research has shown that animals condition to high noise levels. However, it is recommended that peak noise levels be assessed before this use is allowed.
- N. This appears to be a compatible land use in all NEF zones.

APPENDIX "H"

Calculation of the Projected Rural Population

- Assumptions -
- (i) the size of the rural population in the year 2001 will be approximately the same as today.
 - (ii) the projected persons per dwelling unit is 3.0.

Based on these assumptions, the rural population today (and for the future) was calculated as follows:

- at 100 units per year to 2001, it is estimated that there will be approximately 13,700 units. This, multiplied by the projected persons per household of 3.0 results in a population of approximately 41,100 people.
- with a growth rate of 150 units per year, using the same method, it is estimated that there will be 14,950 units by 2001, which will house approximately 44,850 people.

The projected rural population is based on the average of the high and low projected total units and the projected 3.0 persons per household, e.g.,

$$\frac{13,700 + 14,950}{2} \times 3.0 = 42,975$$

APPENDIX "I"

Mobile Home Parks

Mobile Home Parks in the Rural Area may be developed:

- a) under single ownership (with owner management)
- b) by a plan of subdivision, under either condominium or leasehold tenure (under management)
- c) by a plan of subdivision, under either freehold or leasehold tenure (without management).

Definition:

A Mobile Home Park has usually about 100-250 mobile homes, located on lots of approximately 45 ft. x 75 ft. to accommodate a 12 ft. x 60 ft. mobile home; lots have individual access to internal roads, amenities such as a park, swimming pool and community hall may also be provided. The park is serviced by a water supply, sanitary disposal system, electricity and other utilities.

Maintenance of the park is the responsibility of the owner. The maintenance for such services as roads, snow removal, solid waste pick-up, utilities, etc., are also the responsibilities of the owner. However, if lots are owned individually, above services are provided by the municipality.

Location of Land for Mobile Home Parks

A Mobile Home Park is a residential development. The small lots of a Mobile Home Park are inadequate for an assessment on the basis of individual water supply and septic tile systems. The location for a Mobile Home Park, therefore, would require careful consideration of sites which are capable of both:

- a) sustaining a sewage disposal system, and
- b) providing an adequate communal water supply.

Both requirements are subject to approval by the Ministry of Environment. Besides these two basic requirements, other physical and environmental factors must be carefully considered. Site Planning for Mobile Homes - a handbook published by Central Mortgage and Housing Corporation, provides the following criteria for location of land for mobile home developments:

"Mobile home developments will not be accepted in areas zoned for industrial or commercial development, small areas spot zoned for residential use surrounded by industrial or commercial uses, or in areas subject to excessive noise or disturbances. Mobile homes proposed in locations such as scenic or recreational areas where their presence could have harmful effects on the quality of the environment and surroundings, will only be considered after extensive consultation with Provincial or other appropriate bodies having an interest in preservation and conservation."

A Mobile Home Park creates a large number of dwelling units with a corresponding population which would require similar services to a settlement area. In assessing the location for a Mobile Home Park development, the following should be considered:

1. Areas abutting existing settlements.
2. Areas which would not create any detrimental effects, preferably in locations not affected by any constraints, as identified in this study.

Appendix J.1

FAMILY PHYSICIANS ACCORDING TO LOCATION OF PRACTICE IN 1976^{1,2}

<u>LOCATION</u>	<u>NUMBER</u>
Hamilton-Wentworth Region	
Ancaster	5
Binbrook	2
Dundas	12
Freelton	5
Lynden	2
Mount Hope	2
Stoney Creek	18
Waterdown	6
Haldimand-Norfolk Region	
Caledonia	5
Niagara Region	
Grimsby	13
Smithville	3

¹ Practices in the Cities of Hamilton and Burlington have been excluded.

² Source: Hamilton Academy of Medicine - June, 1976

Medical Directory - 1975

Bell Canada Telephone Directory - November, 1975

Appendix J.2

ACCESS SERVICES BY MUNICIPALITY ACCORDING TO DELIVERY LEVEL

<u>MUNICIPALITY</u>	<u>REGIONAL</u>	<u>LEVEL</u>	
		<u>LOCAL</u>	<u>NEIGHBOURHOOD</u>
Regional Municipality of Hamilton-Wentworth ^{1,2}	X	X	
City of Hamilton ³			X
Town of Ancaster		X	
Town of Dundas		X	

¹ Central Information Service, with information as its major function, provides local information services for the City of Hamilton.

² Central Information Service collaborates with local services (Ancaster and Dundas) and uses them for resource location.

³ North End Information Service.

Appendix J.3

URBAN AND RURAL CENTRES BY ACCESS SERVICE DELIVERY LEVEL

<u>CENTRE</u>	<u>LOCAL MUNICIPALITY</u>
Urban	
First Order	
Hamilton	X
Second Order	
Hamilton Mountain Centre	
Third Order	
Ancaster	X
Dundas	X
Stoney Creek	
Fourth Order	
Waterdown	
Rural	
Fifth Order	
Binbrook	
Freelton	
Greensville	
Lynden	X
Mount Hope	
Winona	
Sixth Order	
Alberton	X
Brockview	
Carlisle	
Carluke	X
Copetown	X
Dickenson Rd.	
Flamborough Centre	
Harper's Corners	
Jerseyville	X
Kirkwall	
Millgrove	

Appendix J.3 (Cont'd)

<u>CENTRE</u>	<u>LOCAL MUNICIPALITY</u>
Sixth Order (Cont'd)	
Mountsberg	
Orkney	
Rockton	
Sheffield	
Southcote	X
Strabane	
Tapleystown	
Troy	
Vinemount	
Westover	
Woodburn	



